The Economic Impact of the Seafood Sector at Ireland's Main Ports

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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 at Ireland's Main Ports

This report reveals the results of the project to evaluate Irelands' 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. In many of the ports and hinterlands assessed in this study, common characteristics describe regions of poor agriculture land, at significant distance from major urban settlements, with low levels of transport connectivity. Opportunities in agriculture are low while there is a lack of factors to attract industry to these locations. Nevertheless, each of these ports are located in areas of remarkable natural beauty and stunning landscapes. For these reasons, these areas are highly dependent on the seafood and tourism sectors.

The 10 ports selected here are the ports with the highest volume and value of seafood landings in Ireland and are located all around the coastline in the north-east, east, south-east, south-west, west and north-west corners of the island. The hinterlands around these ports were designated as the local zones of influence of these ports through dialogue with local stakeholders and to capture all the major seafood activity in the localities. Significant levels of aquaculture and fish processing activity are captured in these areas (35% and 45% respectively) while three-quarters of the volume and value of Irish fleet landings are landed in these ports.

All data used in this project is sourced from the telephone surveys of seafood producers inside and outside the port hinterlands combined with CSO Census data. From 859 producers identified within the port areas, 435 participated in the survey, a return rate of 50%. BIM would like to thank all participants in this survey for their time and in delivering such a high response rate for this survey. Many thanks are due to all local stakeholders that provided their time and knowledge throughout this project and assisted in delivering this high level of participation. The project manager Richard Curtin, BIM, would like to recognise the excellent work carried out by Oxford Economics and Perceptive Insight in the course of this project.

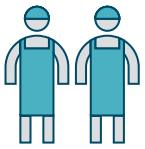
Executive summary

The Irish seafood sector is an important component of the Irish economy. In particular, the process of acquiring seafood from the waters surrounding Ireland's coastline, and then its subsequent processing, play a crucial role in some of the country's more peripheral economies.

To shed new light on the full impact of the industry at both national and local level, Bord Iascaigh Mhara (BIM) commissioned Oxford Economics and Perceptive Insight to assess the economic impact of the seafood sector at 10 of Ireland's most prominent ports, ranging from Howth – the largest of these port economies – down to Dunmore East.

For each port, our analysis considers three key seafood-related activities:

- commercial fishing;
- aquaculture; and
- fish processing.



8,445 Jobs

Total employment sustained across Ireland through the seafood activity at its 10 main ports.

This executive summary sets out our key findings in terms of total contributions to GDP, jobs, wages and tax revenues in 2018. Our analysis includes the estimated impact of economic activity in the seafood sector's supply chain (indirect impact), and also wage-related spending in the wider consumer economy (induced impact).

The seafood sector's impact on the national economy

Commercial fishing, aquaculture and fish processing at the 10 ports bring substantial economic benefits to the Irish economy as a whole. When the direct, indirect and induced impacts are combined, we calculate that **seafood activity related to the 10 ports sustained a total of 8,445 jobs throughout Ireland in 2018, paying wages worth €267 million.**

We also find that this activity generated a total contribution to Ireland's GDP of €646 million and provided fiscal benefits estimated at €56 million. Fig. 1 shows how these national totals are divided between the direct, indirect, and induced impacts.

Fig. 1: Combined economic benefits of the 10 ports' seafood activity, 2018

Ports seafood sector	Ireland		
	GVA (€m)	Employment	Wages (€m)
Direct	366	4,775	136
Indirect	195	2,695	91
Induced	86	970	39
Total	**646**	**8,445**	**267**

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

The seafood sector's impact on local Irish economies

In terms of GVA, employment, and wages, we see that the ports' seafood sector makes an economic contribution in all eight NUTS3 regions of Ireland – even those with no direct port presence. None of the 10 ports fall within the midlands or mid-west, but these regions still receive some of the benefits via supply chain and subsequent consumer spending.

We estimate that these overall economic benefits are largest in the border and south-west regions (see **Fig. 2**). Between them, these regions are home to five of the 10 ports included in our analysis, including two of the largest ports in terms of seafood sector activity: Killybegs (border) and Castletownbere (south-west). As a result, the border and south-west regions account for over two-thirds of the seafood related turnover generated across the 10 ports.

€267m
Wages sustained
The Border and South-West regions enjoyed a significant share of the wages sustained by the sector.

Fig. 2: Estimated benefits of the ports' seafood sector by NUTS3 regions

Ports seafood sector	Model output summary		
	GVA (€m)	Employment	Wages (€m)
Border	199	2,440	81
West	45	765	20
Mid-West	8	120	4
Mid-East	48	540	25
South-West	177	2,475	66
South-East	79	1,140	33
Dublin	86	855	32
Midlands	6	105	4
Total	**646**	**8,445**	**267**

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

These wide-ranging local impacts are especially important given that the port economies are not affluent areas, relative to the national average. While their unemployment rates are broadly below average, this hides weak employment opportunities (with net out-commuting a common trend) and relatively high rates of economic inactivity. In addition, the outlook for the port economies is likely to be challenging given their sectoral structure, demographic trends, and stock of skills. Therefore, a vibrant and growing local seafood sector is important for the economic and demographic health of these areas.

€646m
GVA sustained
The economic benefits associated with the ports' seafood sector were estimated to be largest in the Border and South-West.

The impact of each seafood sub-sector

We are also able to break down the total impact of the seafood sector across the 10 ports into each of its three sub-sectors. Our headline findings for each are:

- Activity in the **commercial fishing** sub-sector is estimated to have sustained 3,520 jobs, €112 million of wages, and made a €277 million contribution to the national economy in 2018.
- Activity in the **aquaculture** sub-sector sustained 1,230 jobs, €35 million of wages, and a €86 million contribution to the economy.
- The **fish processing** sub-sector sustained 4,355 jobs, €145 million of wages, and contributed €347 million to the Irish economy.[1]

1 Summing the benefits of all three sub-sectors within our definition of the seafood sector (commercial fishing, aquaculture and fish 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 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 survey exercise). 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 this 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 Insight to estimate the economic contribution of the seafood sector in 10 of Ireland's ports.

1.2 The seafood sector at the ports

This report concentrates on the seafood sector at 10 of Ireland's most prominent ports and goes on to show the economic benefit this sector supports within the Irish economy.[2] Although these port areas vary in a number of respects (see the socio-economic section in **Appendix 2**), the local seafood sector remains a mainstay of these local economies. The port economies are widely dispersed throughout the island and are found in six of Ireland's eight regional authority areas.[3] Our analysis will lay out how the seafood sector at the ports impacts each of these 'local' areas, in addition to the country as a whole.

Fig. 3: Port areas and their regions

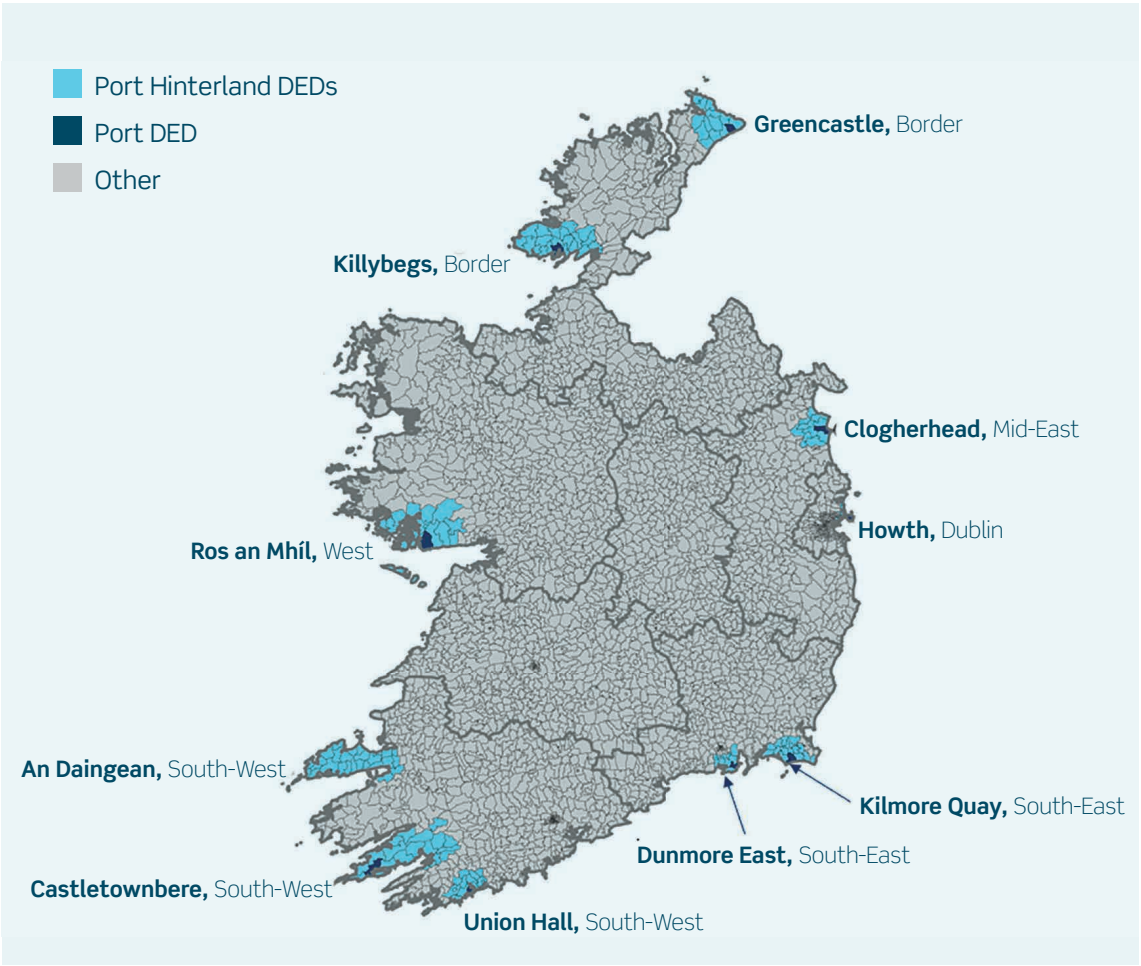
Port area	NUTS3 region
An Daingean	South-West
Castletownbere	South-West
Clogherhead	Mid-East
Dunmore East	South-East
Greencastle	Border
Howth	Dublin
Killybegs	Border
Kilmore Quay	South-East
Ros an Mhíl	West
Union Hall	South-West

Source: *CSO*

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.

2 A port area refers to the port itself and its hinterland area. This in turn is defined as the port's own district electoral division area (DED) as well as those surrounding it and constituting its hinterland (informed by BIM) – see **Fig. 4**.
3 All references to 'Ireland' and seafood's economic benefits are attributable to the Republic of Ireland i.e. excludes Northern Ireland.

Fig. 4: Port areas throughout Ireland



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 within the 10 port areas – a response rate of close to 40%, relative to the known seafood population.

Fig. 5: Survey participation by sub-sector

	Commercial fishing	Aquaculture	Fish processing	Total
Survey responses:				
Port areas	280	21	27	328
Outside study areas	54	77	8	139
BIM seafood population	676	120	63	859
Ports' response rate:	**41%**	**18%**	**43%**	**38%**

Source: *Oxford Economics, Perceptive Insight, BIM*

As one of the largest and more diverse seafood sub-sectors, it was important that the survey captured a broad representation of the commercial fishing industry across the ports. Most fleet segment categories demonstrated strong participation rates within the survey, with the pelagic and general polyvalent segments being particularly well represented.

Fig. 6: Survey participation within commercial fishing by fleet segment

Fleet segment	Survey responses	Share of population
Aquaculture	0	0%
Beamer	1	33%
Pelagic	12	57%
Polyvalent general	199	40%
Polyvalent potting	26	30%
Specific	21	36%
Unknown	21	-
Total	**280**	**41%**

Source: *Oxford Economics, Perceptive Insight, BIM*

Furthermore, participation rates across vessel size categories were above a third in most instances. Indeed, the survey response rates among the larger vessel businesses were the strongest across all length classes. Over 50% of the ports' 18 metre plus fishing population participated with the study.

Fig. 7: Survey participation within commercial fishing by length class

Length class	Survey responses	Share of population
VL0010	148	33%
VL1012	35	44%
VL1218	15	50%
VL1824	26	55%
VL2440	24	57%
VL40XX	11	58%
Unknown	21	-
Total	**280**	**41%**

Source: *Oxford Economics, Perceptive Insight, BIM*

1.3 The key elements of the seafood sector

In order to quantify the seafood sector's contribution to both the regional and national economies, we first need to understand its components. Our analysis, therefore, estimates the direct activity associated with the commercial fishing, aquaculture and fish processing sub-sectors at each of the ports by drawing on the survey findings and information held by BIM. We then estimate their wider impacts within their local NUTS3 regions and the broader Irish economy. 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.

BOX 1: INTRODUCING ECONOMIC IMPACT ANALYSIS

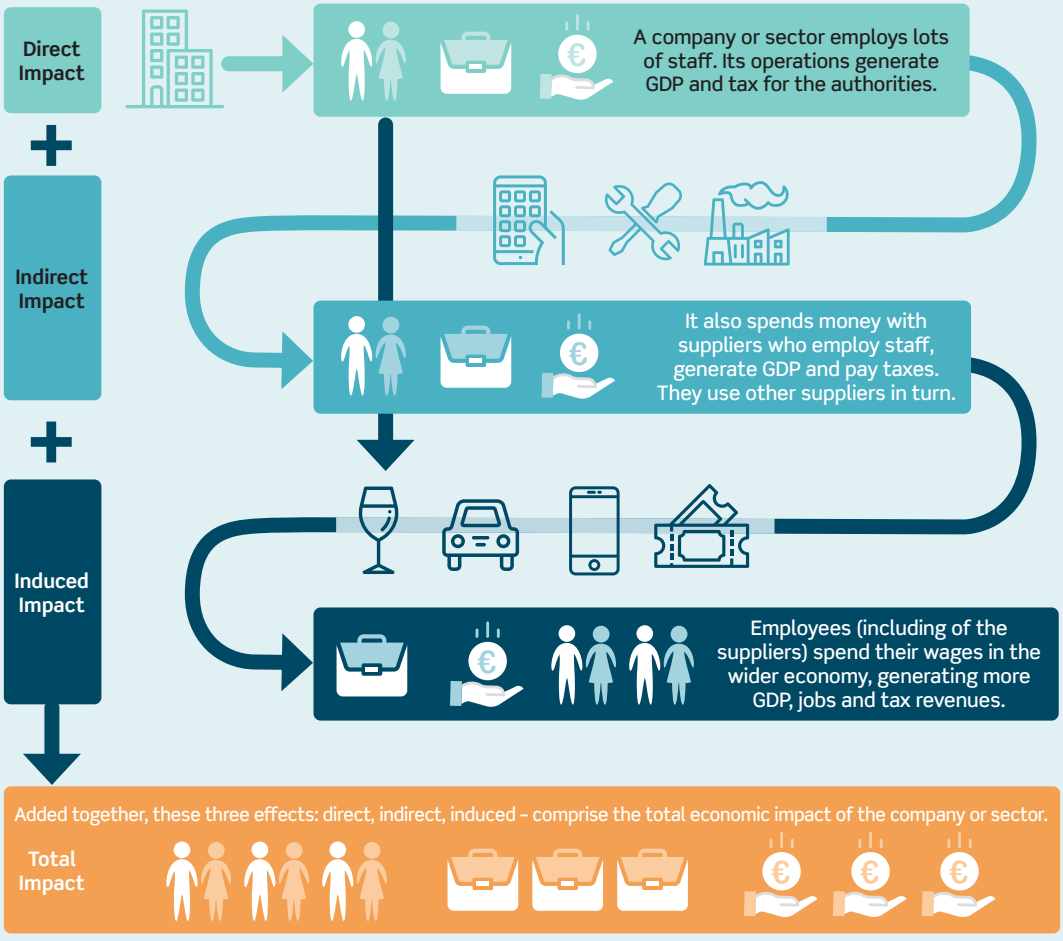
The economic impact of a sector is measured using a standard means of analysis called an economic impact assessment. The report quantifies the three 'core' channels of impact that comprise an organisation/sector's 'economic footprint':

- **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. 8: Economic impact assessment



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 1** of this report).

1.4 Report structure

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

The report takes the following structure:

- An analysis of the seafood activity across the 10 port economies;
- A breakdown of the economic benefits associated with the commercial fishing sub-sector at the national and regional level;
- A breakdown of the economic benefits associated with the aquaculture sub-sector at the national and regional level;
- A breakdown of the economic benefits associated with the fish processing sub-sector at the national and regional level;
- A summary of the overall benefit associated with the ports' seafood sector at the national and regional level; and
- Finally, we present the report's conclusions.

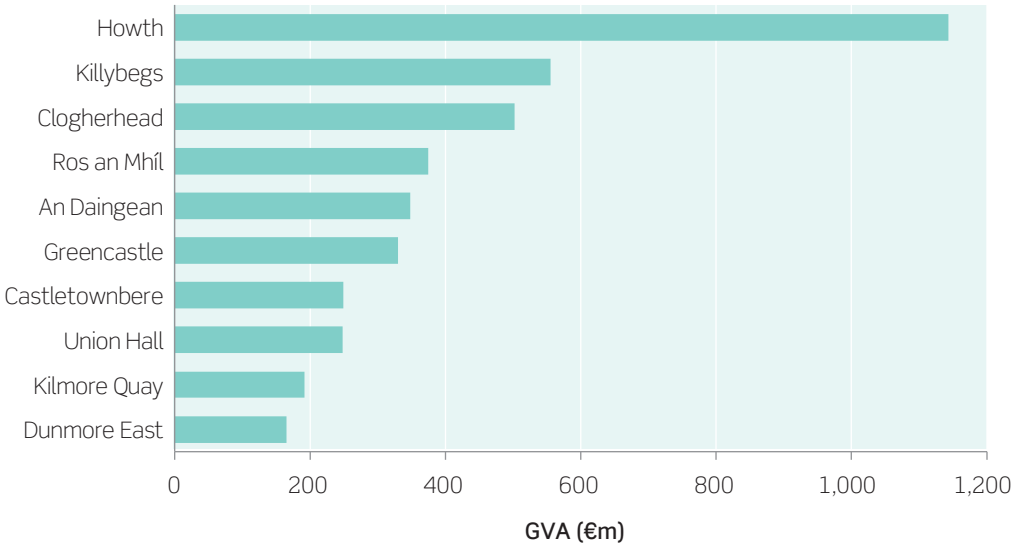
This report is accompanied by a further 10 reports that provide analysis for each individual port covered in the study.

2. The seafood sector at the ports

2.1 The port economies and the seafood sector

Before we present the total benefits associated with the ports' seafood sector, it is important to first understand the size and characteristics of the local port area economies. The latest Census (2016) provided workplace employment data at a sectoral level for small area workplace zones across Ireland. By combining this employment data with our regional productivity estimates we can quantify the economic footprint of the port economies. We therefore estimate that the combined port economies made a GVA contribution to GDP of €4.1 billion in 2018.[4] Howth was by far the largest of the port area economies. This Dublin based port area supported employment of close to 9,600 people and an estimated €1.1 billion in GVA. This was close to twice that of Killybegs – the second largest of the 10 port areas with 4,750 people employed locally and GVA of €555 million.

Fig. 9: Port economy size comparisons, 2018

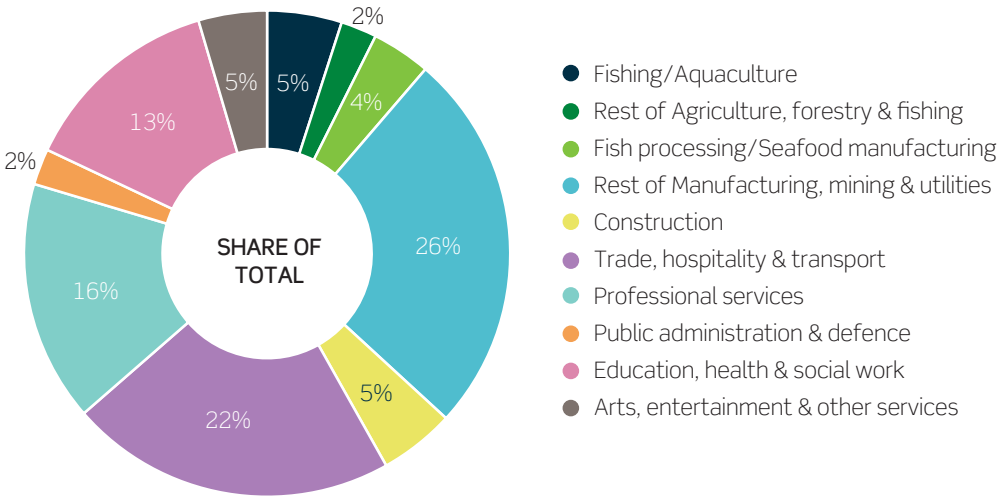


Source: *Oxford Economics, CSO, Perceptive Insight*

As expected, the seafood sector accounts for a significant proportion of the local economy within each port area. We estimate that the seafood sector across the 10 port areas directly generated €366 million in GVA in 2018. Seafood, therefore, directly accounted for approximately 9% of the economy across the ports, just behind 'Professional services' and the 'Education, health & social work' sector with shares of 16% and 13% respectively.

4 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.

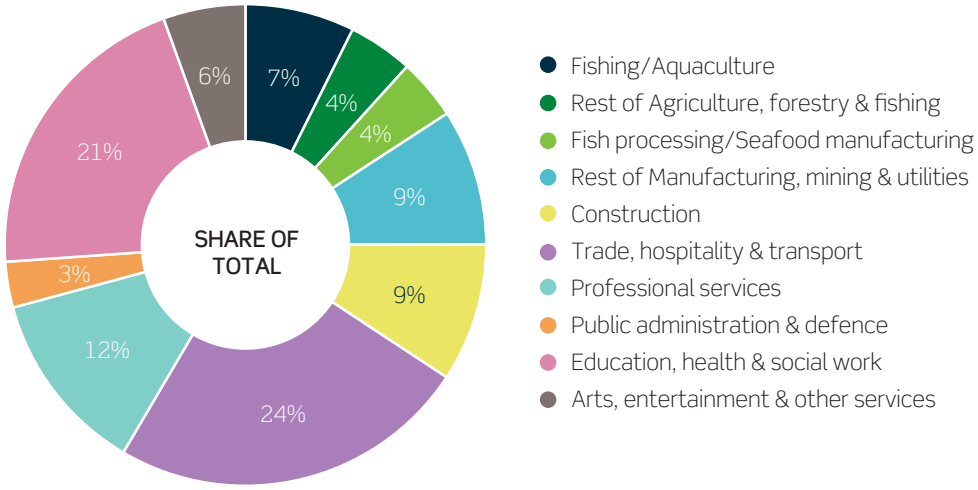
Fig. 10: Collective port area's estimated GVA by sector, 2018



Source: *Oxford Economics, Perceptive Insight, BIM, CSO*

In employment terms, seafood is even more important within the port economies. Combined commercial fishing, aquaculture and fish processing are estimated to directly sustain approximately 11% of workplace employment across the port areas in 2018.[5] Furthermore, fishing and aquaculture represented close to two-thirds of local agriculture, forestry & fishing related employment and fish processing accounted for 30% of local Manufacturing, mining & utilities jobs.

Fig. 11: Collective port areas' employment by sector, 2018



Source: *Oxford Economics, Perceptive Insight, BIM, CSO*

5 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.

2.2 Seafood's main components

All three of the seafood sub-sector's make a significant contribution within the port economies. Using the results from the survey exercise and published sectoral data, we estimate that seafood related businesses directly provided 4,775 jobs, €136 million in wages and generated €856 million in turnover within the port economies – see **Fig. 12**.

Fig. 12: Seafood's sub-sector activity, all port areas, 2018

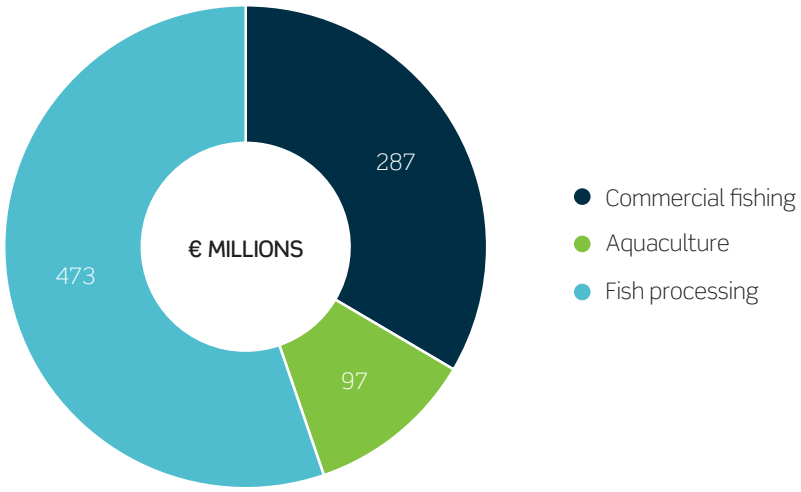
	Turnover (€m)	Jobs	Wages (€m)
Commercial fishing	287	2,275	63
Aquaculture	97	795	19
Fish processing	473	1,705	55
Total	**856**	**4,775**	**136**

Source: *Oxford Economics, Perceptive Insight, BIM*

2.2.1 Commercial fishing

Commercial fishing is the second largest seafood sub-sector across the 10 port areas. Fishing is estimated to account for a third of the sector's total turnover across the ports, less than the fish processing sub-sector (€473 million), but larger than aquaculture (€97 million).

Fig. 13: Seafood sector turnover, all port areas, 2018

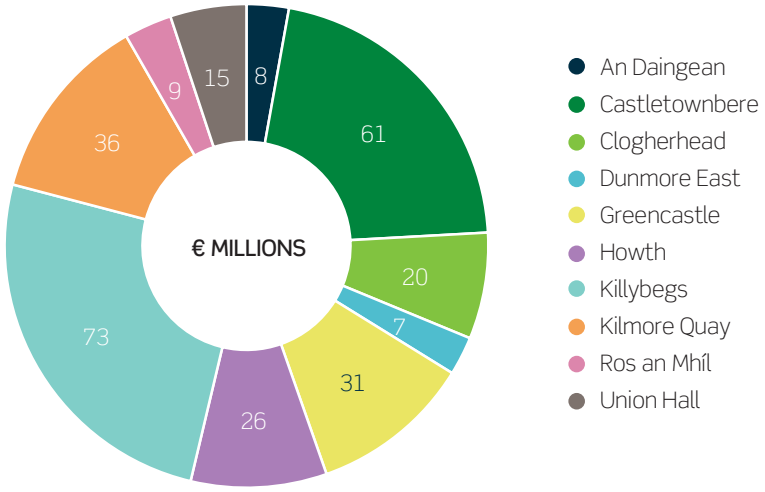


Source: *Oxford Economics, Perceptive Insight, BIM*

Commercial fishing activities are present across each of the 10 port areas. Killybegs has the largest commercial fishing sector, generating an estimated €73 million of turnover in 2018 (or 25% of the total), followed by Castletownbere (€61 million) and Kilmore Quay (€36 million).

Although it was the smallest in turnover terms, Dunmore East's seafood sector has a strong reliance on commercial fishing (€7.4 million) within its seafood sector. Almost two-thirds (65%) of all seafood sector activity in this port is driven by commercial fishing. Only Greencastle showed a stronger dependency on this sub-sector where it accounted for 67% of seafood related turnover.

Fig. 14: Commercial fishing turnover, port areas, 2018

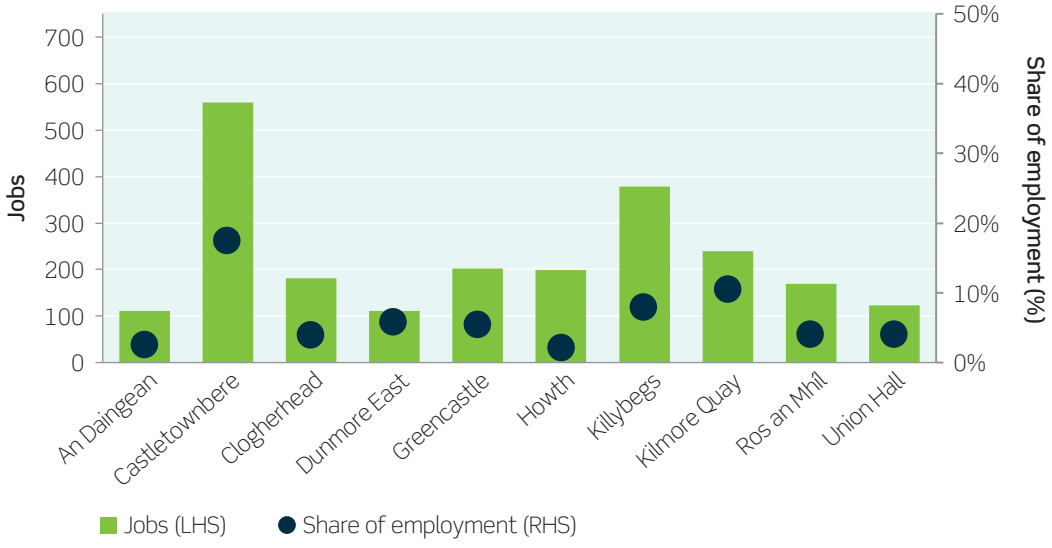


Source: *Oxford Economics, Perceptive Insight, BIM*

The 2,275 direct jobs in commercial fishing across the 10 port areas equates to approximately 5% of overall workplace employment.[6] Although second to Killybegs in terms of turnover, Castletownbere is the largest employer in commercial fishing activities, 560 jobs, or almost a quarter of the collective ports' fishing total. Castletownbere's commercial fishing employment also accounts for the largest share of local workforce jobs within its port area, the equivalent to 17% of the total. Kilmore Quay (10.4%) is the only other port where commercial fishing accounts for a tenth or more of all local jobs.

At the other end of the scale, port area economies such as Howth (2%) and An Daingean (3%) are proportionately less reliant on commercial fishing activities for employment.

Fig. 15: Commercial fishing as a share of overall employment, port areas, 2018



Source: *Oxford Economics, Perceptive Insight, BIM*

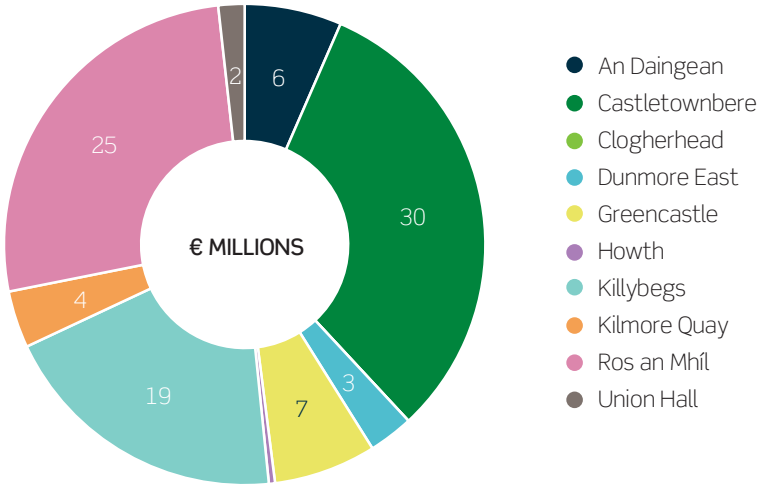
6 Again, these estimates adopt workplace employment for the port area available as of the 2016 Census and supplemented with our survey estimates of the seafood sector in 2018.

2.2.2 Aquaculture

We estimate that aquaculture directly provided 795 jobs across the 10 port areas in 2018. Aquaculture is the smallest of the three seafood sector activities, and as such, the bulk of activity tends to be focussed on a few ports. Castletownbere alone accounts for a third of total aquaculture turnover across the ports (€30 million). When considered alongside Ros an Mhíl and Killybegs, these three port areas account for almost 80% of aquaculture's turnover total. Howth recorded the smallest aquaculture sub-sector among the ports, not including Clogherhead, which did not support any aquaculture related activity.

Although Ros an Mhíl's aquaculture sector was only the second largest in turnover terms, it was proportionately the most important. Just over a half of Ros an Mhíl's total seafood related turnover belonged to the aquaculture segment – over twice the share realised in Castletownbere (19%).

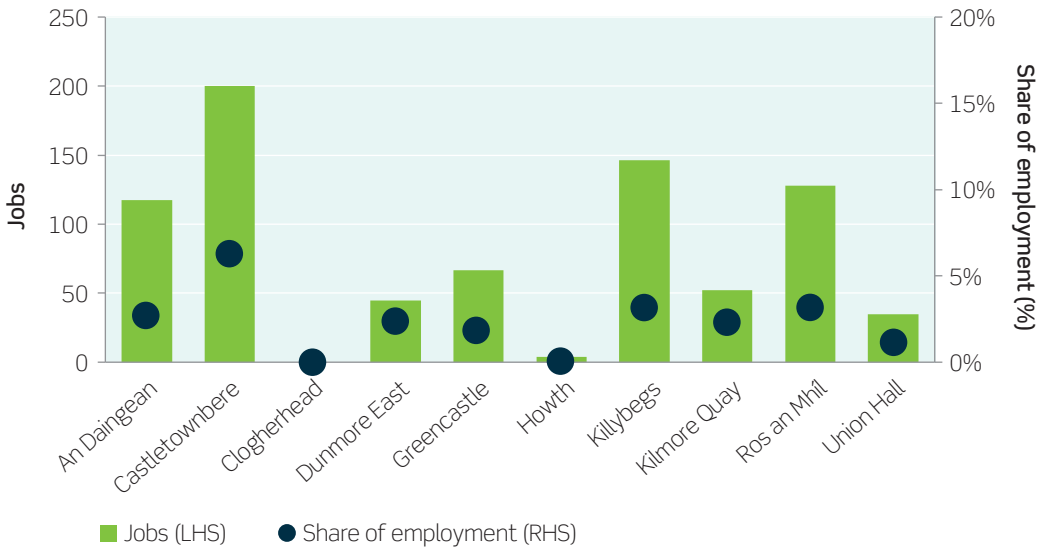
Fig. 16: Aquaculture turnover, port areas, 2018



Source: *Oxford Economics, Perceptive Insight, BIM*

Unsurprisingly, aquaculture jobs as a share of total was largest in Castletownbere, equivalent to 6% of the local employment total (or 21% of the local seafood sector). Killybegs aquaculture sub-sector was the next largest in employment terms, but only accounted for 3% of employment in its wider port area economy.

Fig. 17: Aquaculture as a share of overall employment, port areas, 2018

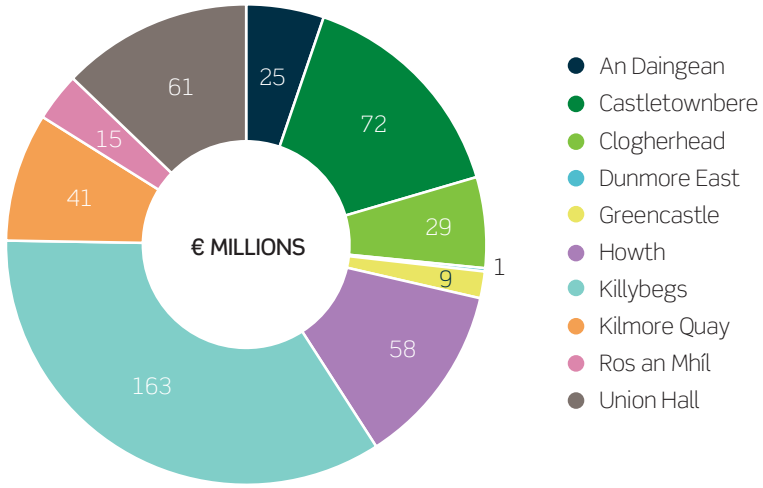


Source: *Oxford Economics, Perceptive Insight, BIM*

2.2.3 Fish processing

Fish processing activity is present across all 10 ports. Killybegs is the strongest base for this activity, supporting €163 million in turnover – the equivalent to over a third of the fish processing total across the 10 port areas. The next largest fish processing ports are Castletownbere (€72 million), Union Hall (€61 million) and Howth (€58 million).

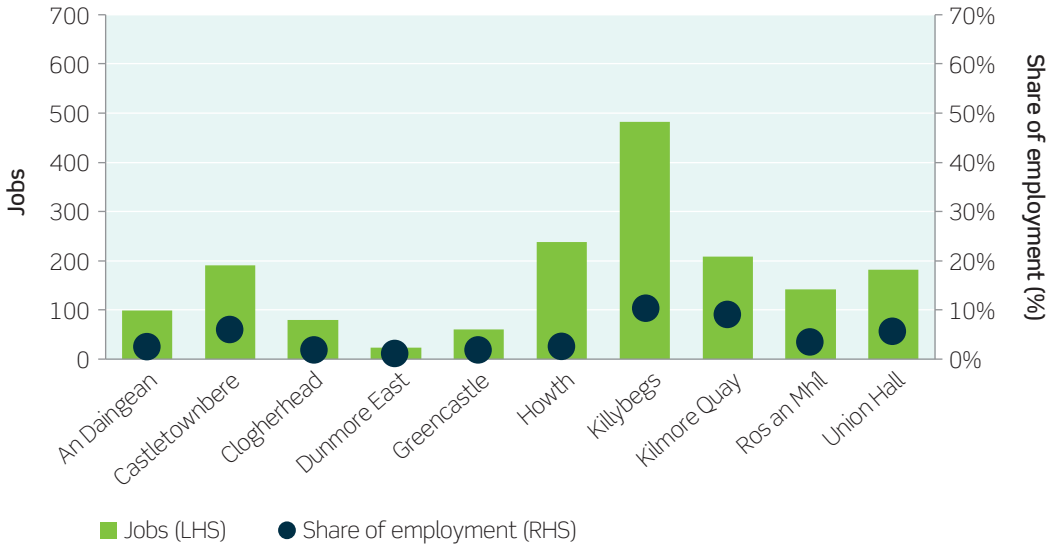
Fig. 18: Fish processing turnover, port areas, 2018



Source: *Oxford Economics, Perceptive Insight, BIM*

Fish processing is significantly important to Union Hall as it accounts for close to 80% of local seafood related turnover. We estimate that the processing sub-sector supported 180 jobs locally in Union Hall and accounted for 6% of the port area's workforce jobs.[7] Fish processing forms the next highest shares of seafood turnover at Howth (69%) and Killybegs (64%) – the second largest and largest port employers in this activity. While Howth supports a greater number of processing jobs (240) compared to Union Hall (180), the sub-sector only accounted for just 2% of overall local employment. As illustrated previously, this is a result of the comparative size differences between Howth's economy and that of the other port areas.

Fig. 19: Fish processing as a share of overall employment, port areas, 2018



Source: *Oxford Economics, Perceptive Insight, BIM*

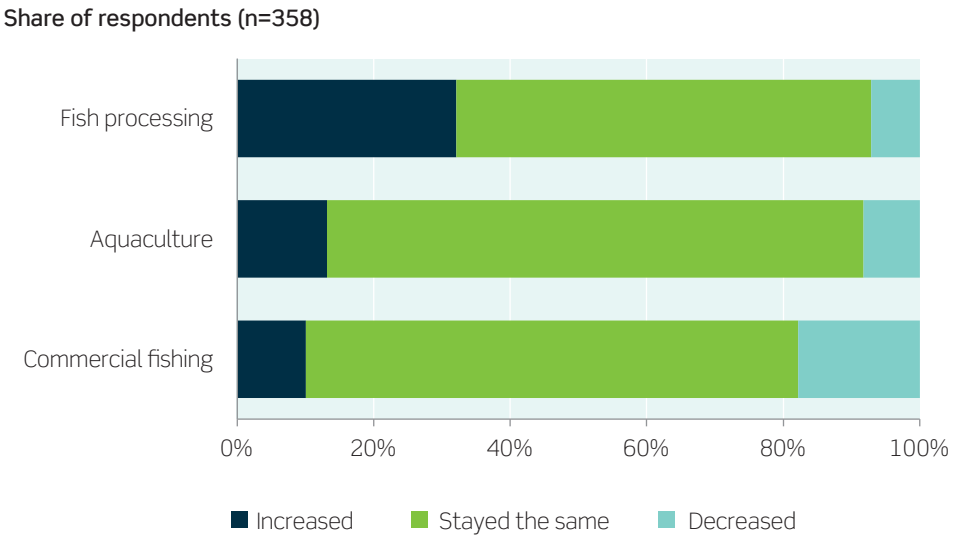
7 Once again, we are comparing 2018 seafood estimates against the latest available (2016) publishing employment data for the local port areas.

2.3 Understanding the local seafood sector

2.3.1 Turnover and growth

Evidently, the seafood sector accounts for a significant share of economic activity taking place within the port areas. That said, turnover growth has been difficult to achieve for local seafood businesses. Only 12% of port seafood respondents reported their turnover had increased over the previous year. The vast majority (72%) said that turnover levels remained unchanged and 15% had recorded a fall. However, the results show significant variation within the seafood sector itself. Almost a third of processor respondents noted turnover growth over the previous year, compared to just 10% and 13% in commercial fishing and aquaculture respectively. Meanwhile, close to a fifth of fishing respondents noted a fall in turnover over the same period. A similar pattern was evident when respondents were asked how their workforce had grown over the last year. Over a third of processors recorded an increase, compared to only 5% and 9% of aquaculture and commercial fishing respondents respectively.

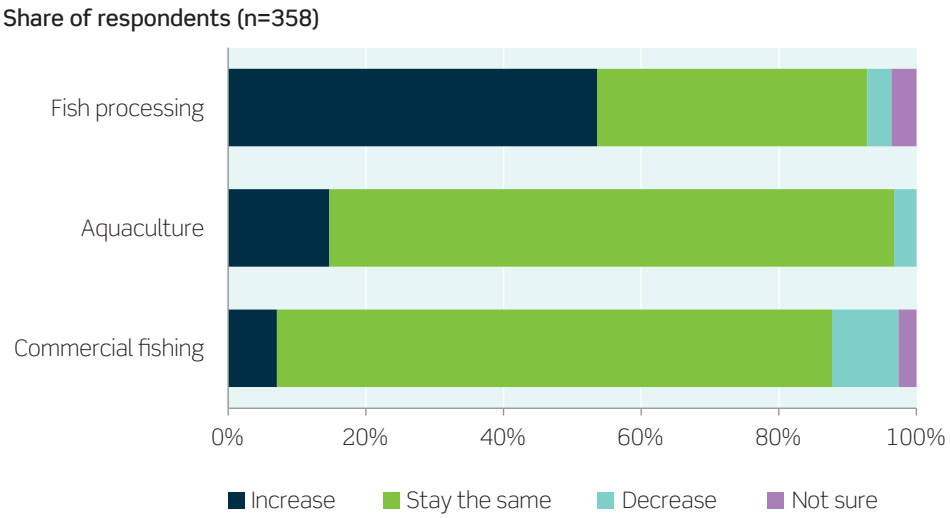
Fig. 20: Turnover growth in the recent year, port's seafood sub-sectors, 2018



Source: *Oxford Economics, Perceptive Insight*

Close to 80% of all respondents said they did not expect their turnover to change over the next 12-month period, while only 12% again expected to see an increase. When we break down these results by sub-sector, we find that fish processors are much more optimistic about their sales outlook in comparison to the aquaculture and commercial fishing segments. Over half of processor respondents recorded an expectation for growth over the next year, compared to just 7% of respondents in the commercial fishing sector.

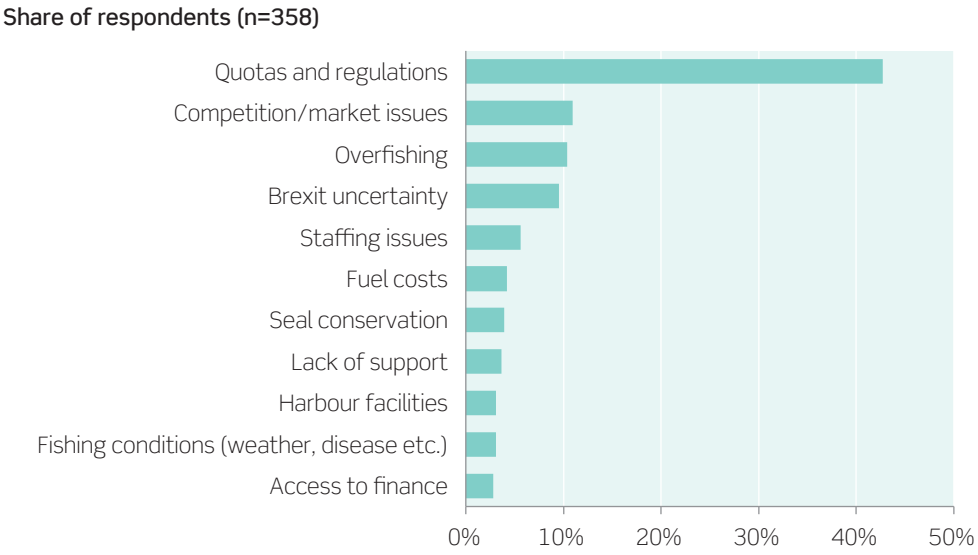
Fig. 21: Turnover growth expectations, port's seafood sub-sectors, 2018-2019



Source: *Oxford Economics, Perceptive Insight*

As part of the survey exercise respondents were also asked to identify the greatest constraint to growth within the local seafood sector. By far the greatest concern expressed by the ports' respondents was the impact of quotas and regulations on the ability to grow their business. Over 40% of respondents gave this issue as the greatest constraint to growth in the local seafood sector, followed by competition in the market (11%) and overfishing (10%).

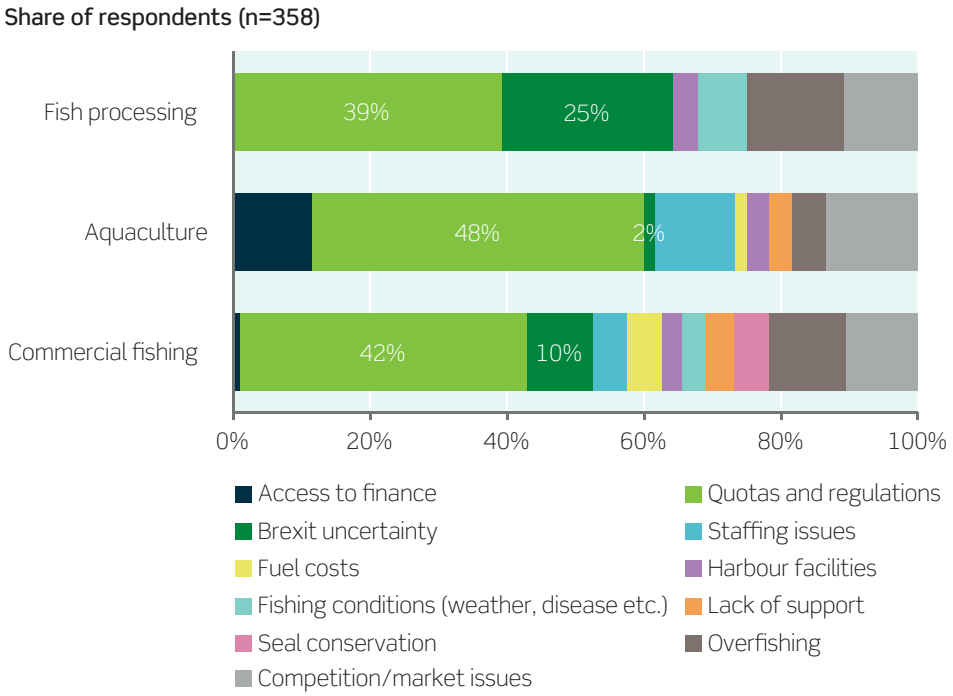
Fig. 22: Main constraints to growth, port's seafood sector, 2018



Source: *Oxford Economics, Perceptive Insight*

Opinions vary more widely when we break down responses by seafood sub-sector. Although 'Quotas and regulations' remain the most widely referenced constraint to growth across the overall sector, this issue was particularly prevalent within the aquaculture element, representing close to 50% of all responses. Equally, although Brexit uncertainty ranked as only the fourth most common constraint to growth across the collective seafood sector – it was the second most referenced issue for local fish processors. A quarter of respondents given this as the main issue hindering their expansion.

Fig. 23: Main constraints to growth, port's seafood sub-sectors, 2018



Source: *Oxford Economics, Perceptive Insight*

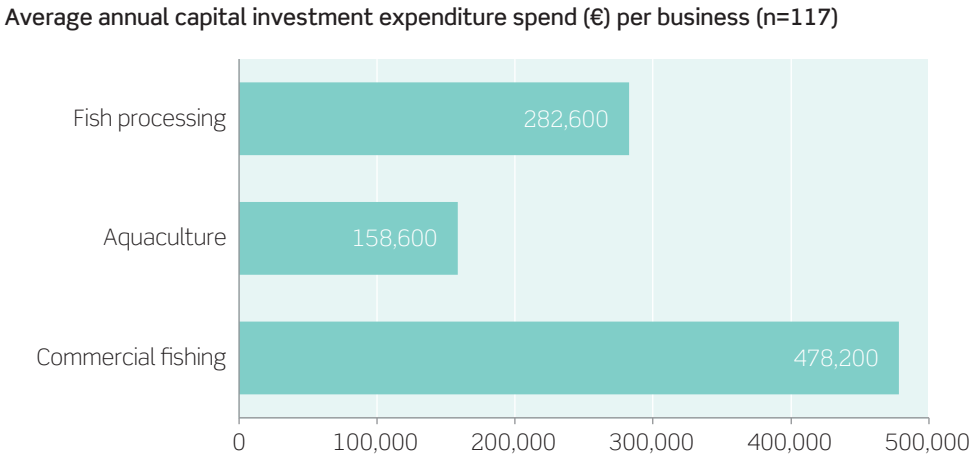
To better understand how the seafood industry is impacted by changes in demand the survey asked the sector whether they would be motivated to hire additional employees if fish quotas were increased by 20%. Only 35% of respondents said this would lead to additional staff being taken on within their businesses. Responses to this question were similar across the sub-sectors. For those who responded with a 'no', a follow-up question was then asked to understand how much quotas would have to increase for additional staff to be employed. Almost 90% of respondents said they could not quantify the increase required.

2.3.2 Investment

A third of seafood respondents stated that they had made capital investments in the last financial year. Just 30% of commercial fishing sector respondents said they made capital investments over this period – a slightly smaller share than that found within the corresponding processing and aquaculture segments (39% and 43% respectively). The survey also reveals that the average capital investment made was close to €0.39 million in 2018.

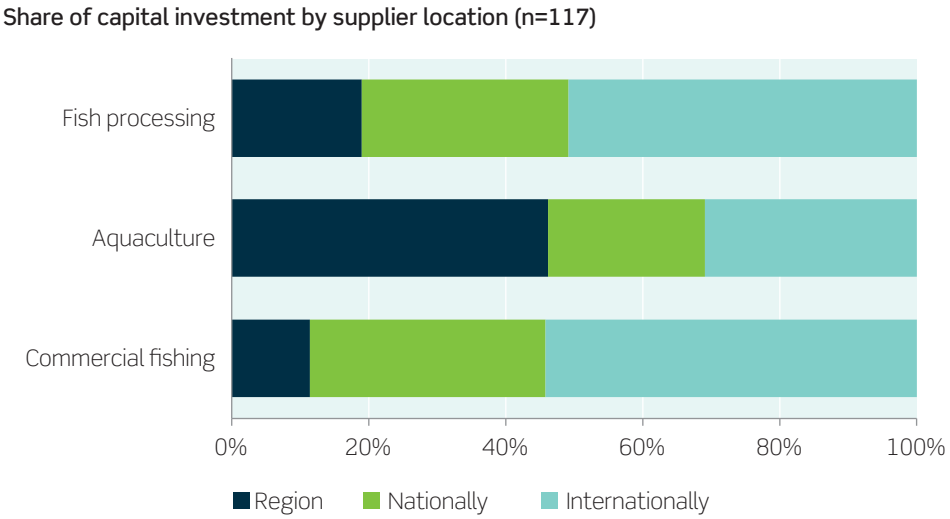
Fisheries typically invested the most with an average spend of €0.48 million – almost two-thirds more than the average investment made by processors during the same year. Furthermore, the survey responses indicate that close to half of the local seafood sector's capital investment spend was retained within Ireland. The aquaculture segment recorded both the highest share of investment spend retained within the broader region (46%) and the lowest share spent outside of Ireland (31%).

Fig. 24: Capital investment spend, port's seafood sub-sectors, 2018



Source: *Oxford Economics, Perceptive Insight*

Fig. 25: Capital investment spend, port's seafood sub-sectors, 2018

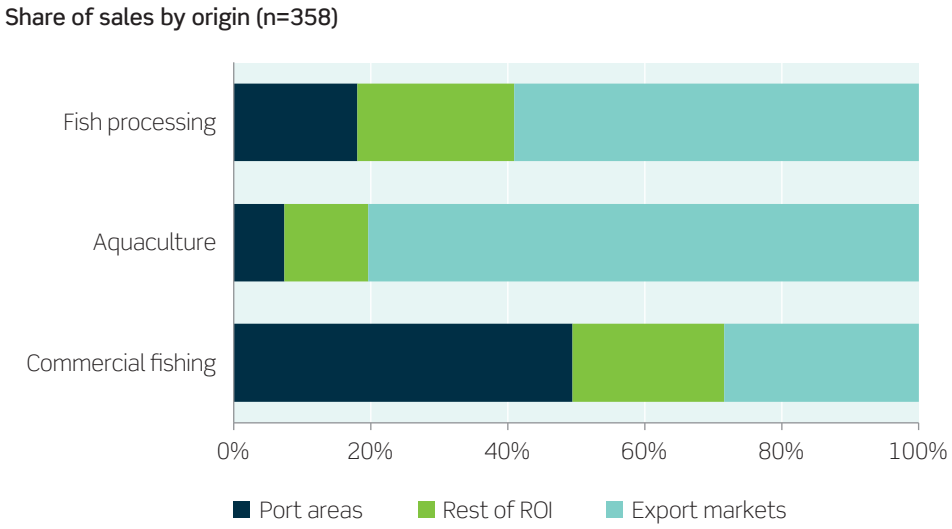


Source: *Oxford Economics, Perceptive Insight*

2.3.3 Seafood markets

Local seafood respondents were then asked where their sales were typically based over the last year. The export market accounted for the largest share of local seafood sales, representing 45% of the total. Following this a third of sales were with customers in the local port area and the remaining 22% originated within the rest of Ireland. The survey results suggest that the domestic market was most important for the fisheries segment – accounting for over two-thirds of sales in the last year. Meanwhile, export sales were more important within the fish processing and aquaculture sub-sectors, accounting for 59% and 80% of total respective sales.

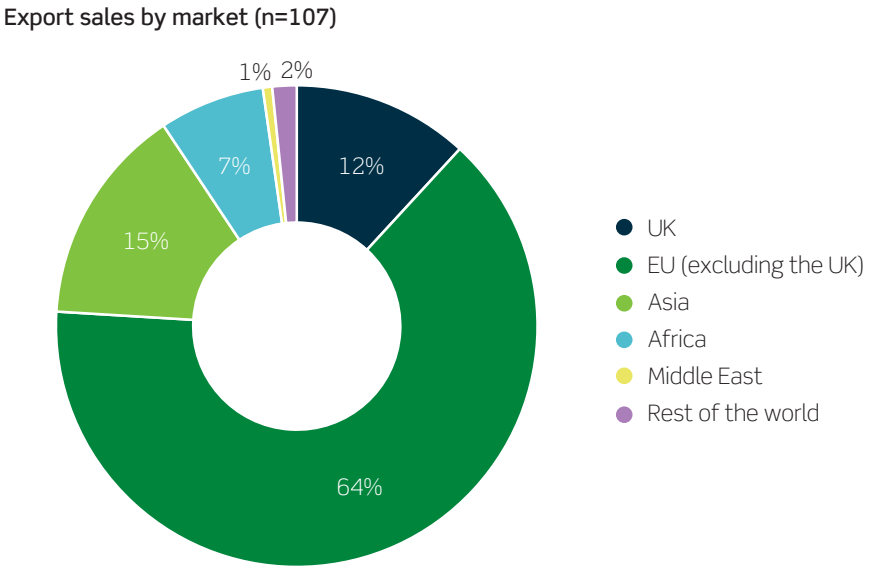
Fig. 26: Sales origin over the last year, port's seafood sub-sectors, 2018



Source: *Oxford Economics, Perceptive Insight*

Local seafood operators were asked what share of their export sales were sold in different markets across the world. The survey responses show that the largest export market was by far the EU market (excluding the UK), representing close to two-thirds of the total. This was followed by Asia and the UK – representing 15% and 12% of international sales.

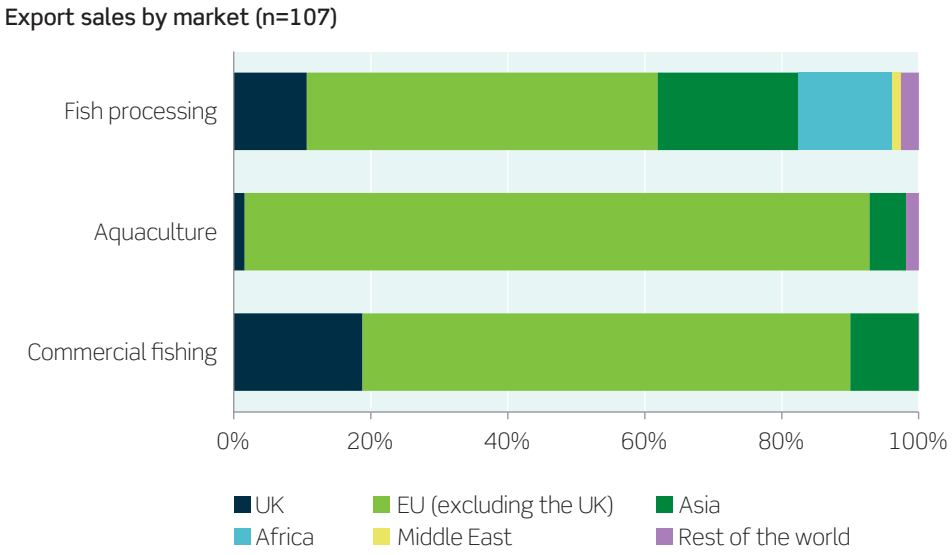
Fig. 27: Export markets, port's seafood sector, 2018



Source: *Oxford Economics, Perceptive Insight*

The EU was the largest export market across the seafood sub-sectors, with aquaculture respondents having a particularly high share of their sales based on the continent. The survey indicates that close to a fifth of commercial fishing exports were sold within the UK, the highest share among the three seafood sub-sectors. Meanwhile, fish processors export sales had more exposure to other markets outside the EU, with close to a third belonging to Asia and Africa alone.

Fig. 28: Export markets, port's seafood sub-sectors, 2018



Source: *Oxford Economics, Perceptive Insight*

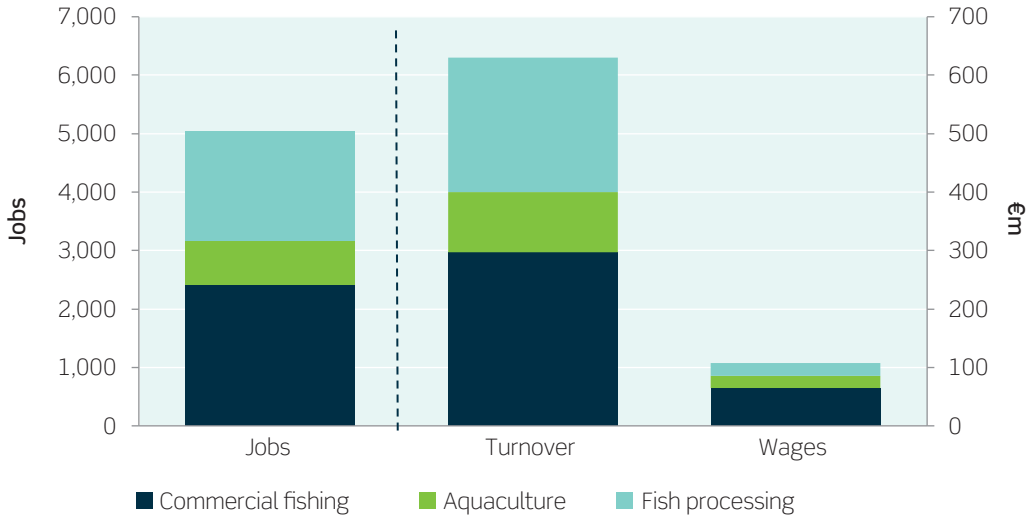
2.3.4 Seafood jobs and the labour force

We estimate that the seafood sector directly supported close to 4,800 jobs across the 10 port area economies in 2018.[8] Both the commercial fishing and aquaculture sub-sectors enjoy relatively high shares of the seafood employment total given their turnover share. For example, fishing represents nearly half of seafood related jobs across the ports, while it only accounts for a third of seafood related turnover. Similarly, fish processing represents just over a third of seafood jobs, while accounting for over half of total seafood turnover. This observation is likely to result in greater capital intensity within the fishing processing sub-sector, thereby reducing the need for labour.

Similarly, wages across the seafood sub-sectors more closely mirror the employment picture, with commercial fishing representing the largest share. Collectively, we estimate that the local seafood sector paid its employees €136 million in wages in 2018. Commercial fishing accounted for €63 million of the earnings total, equating to an average full-time equivalent income of around €27,600 per job. Although the wage total associated with the fish processing sector was lower at €55 million, average wages were higher than commercial fishing at €32,000 per job on average. Finally, the aquaculture sector's 795 jobs are estimated to have supported €19 million in employee wages throughout 2018.

8 Jobs are expressed in Full-Time Equivalent term (FTE), where two part-time roles are taken to represent one full-time position.

Fig. 29: Seafood related jobs, turnover and wages, port areas, 2018

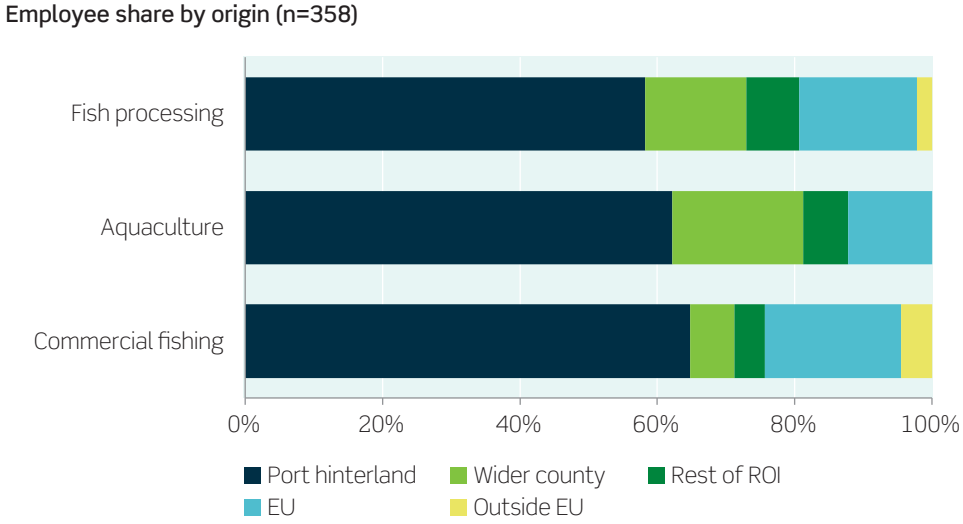


Source: *Oxford Economics, Perceptive Insight, BIM*

The earnings the local seafood sector supports are important because a high proportion of the sector's labour force live within the port areas. This in turn helps to retain consumer spending within the local economy and supports local retail and hospitality-based sectors. The survey results indicate that 80% of the sector's labour tended to live within the local port areas. This was a common trend across all three seafood sub-sectors. Although the processing segment is estimated to have the lowest share of employees living locally, this cohort still accounted for nearly three-quarters of the workforce. Furthermore, the survey suggests that close to 5% of the ports' fishing workforce reside outside Ireland itself.

Equally, in terms of origin, the seafood related workforce is heavily embedded within the local community. On average, respondents said that 63% of their employees hail from the local area, with an estimated 15% share originating from the rest of Ireland and 18% share originated from elsewhere in the EU. Aquaculture businesses typically employed a higher proportion of staff who originate from Ireland (88%). However, the processing and fishing segments are more dependent on foreign labour generally, with EU workers typically filling close to a fifth of positions.

Fig. 30: Employees by origin, ports seafood sub-sectors, 2018



Source: *Oxford Economics, Perceptive Insight*

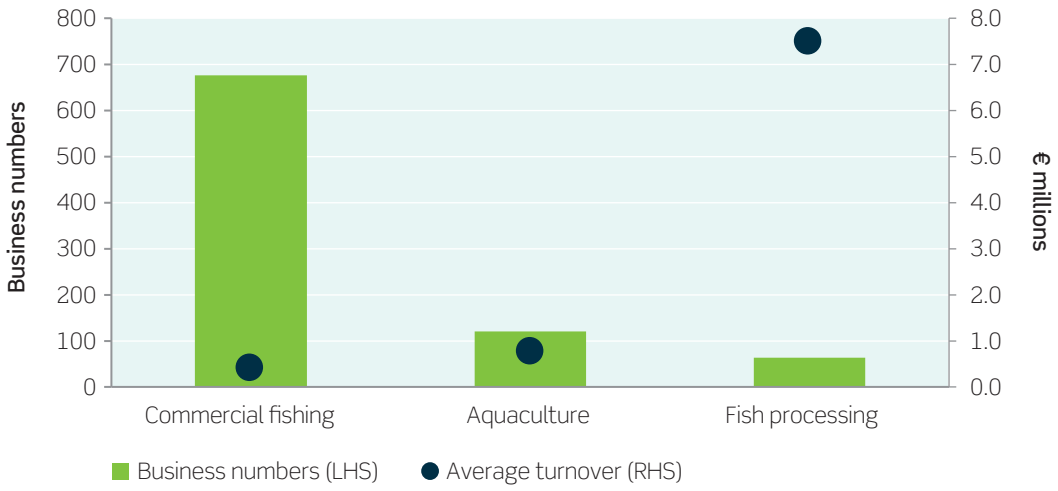
2.3.5 Seafood businesses

In 2018, there were close to 860 seafood related businesses operating across the 10 port areas. Although the commercial fishing component accounted for less than half of the sector's turnover, it represented a significantly higher share (79%) of the local seafood related business base. Consequently, the average turnover of commercial fishing businesses (€0.4 million) was relatively weaker than both the aquaculture and processing segments.

By contrast, fish processing firms are better able to exploit the economies of scale associated with industrialised processes. While there were only 63 operators in this activity across the 10 ports, each had an average turnover of €7.5 million per year, close to 18 times larger than the average for local commercial fisheries.

The aquaculture sub-sector is more in-line with the seafood sector average in turnover terms. The 120 aquaculture businesses generated an average turnover of €0.8 million in 2018. Although this was stronger than the commercial fishing average (€0.4 million), it remains weaker than the seafood sector average of €1 million.

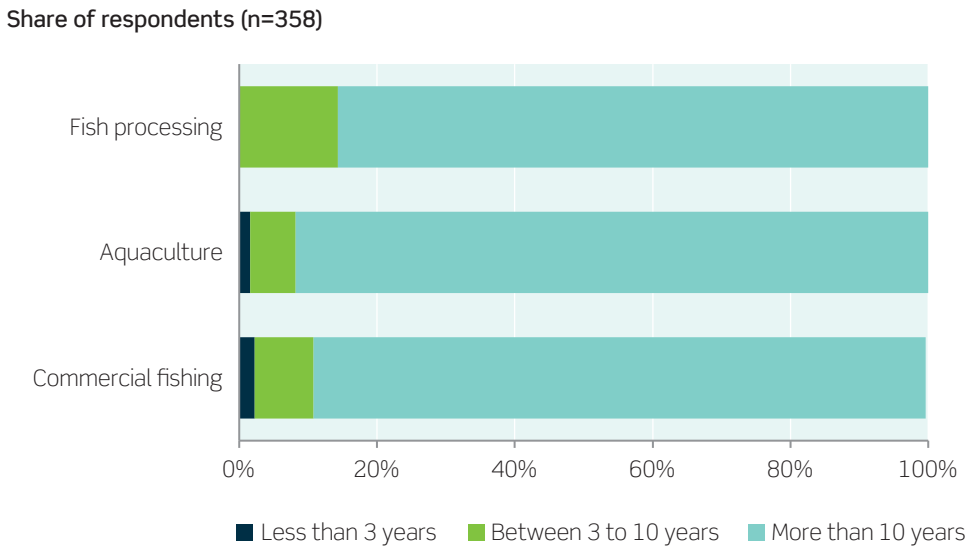
Fig. 31: Business numbers and turnover, ports seafood sub-sectors, 2018



Source: *Oxford Economics, Perceptive Insight, BIM*

The survey results show that seafood sector at the ports tends to be relatively mature with few new entrants overall. A significant majority (89%) of port respondents identified as operating in the sector for more than 10 years. This is a common characteristic across all three sub-sectors of the local seafood sector. Local fish processors tended to have a slightly higher proportion of younger businesses. Close to 15% of these businesses said they had been trading for less than 10 years, compared to just 9% and 11% of aquaculture and fisheries respectively.

Fig. 32: Seafood sector maturity, ports seafood sub-sectors, 2018



Source: *Oxford Economics, Perceptive Insight*

3. The impact of commercial fishing

3.1 Ireland estimates

We estimate that commercial fishing at the 10 ports directly sustains 2,275 FTE jobs with wages of €63 million and a €155 million GVA contribution to GDP (**Fig. 33**).[9] These direct impacts are informed by both Perceptive Insight's seafood survey and BIM's own business registration data for active fisheries in each port area.

Fig. 33: The estimated benefits of the ports commercial fishing sub-sector, 2018

Ports Commercial Fishing	Ireland		
	GVA (€m)	Employment	Wages (€m)
Direct	155	2,275	63
Indirect	76	725	29
Induced	46	520	21
Total	**277**	**3,520**	**112**

Source: *Oxford Economics, Perceptive Insight, CSO*

Using the latest Supply and Use input-output tables for Ireland, we are then able to estimate both the supply chain and consumer spending related impacts that this direct activity supports throughout the Irish economy.[10] This approach was further refined by drawing on the seafood survey, which collected information regarding how local fisheries sourced their supply chain by both sector and location.

We estimate the commercial fishing businesses across the 10 ports had a procurement spend of almost €131 million in 2018. Only 4% of this spend represented a 'leakage' from the Irish economy. In other words, they spent €5.8 million on imported goods and/or services. At a sectoral level, the wholesale & retail trade sector benefited most from the ports' fishing related procurement spend in Ireland – to the tune of an estimated €46 million. The majority of this spend (95%) was attributed to energy requirements of the sector.

Fig. 34: Procurement spend, ports commercial fishing sub-sector, 2018

Sector	Procurement by source (€m)		Total
	Domestic	Imported	
Agriculture, forestry & fishing	14.6	1.3	15.9
Manufacturing	33.8	2.1	35.8
Wholesale & retail	45.9	1.0	46.9
Transportation & storage	7.5	0.9	8.4
Financial & insurance	10.0	0.3	10.3
Real estate	3.6	0.0	3.6
Professional, scientific & technical	10.0	0.3	10.3
Total	**125.4**	**5.8**	**131.2**

Source: *Oxford Economics, Perceptive Insight, BIM*

9 All euro values are quoted in current prices for the year 2018.
10 https://www.cso.ie/en/releasesandpublications/ep/p-sauio/supplyanduseandinput-outputtablesforireland2015/

We estimate that fishing's supply chain spending indirectly supported 725 jobs throughout the Irish economy. This includes not only the fisheries own procurement spend, but that of the subsequent spend which flows throughout the Ireland based supply chain network. These jobs supported €29 million in wages and generated a GVA contribution to GDP of €76 million.[11]

Finally, the spending patterns of those employed directly and indirectly by the commercial fishing sector at the ports creates additional consumer spending related impacts. These induced benefits are estimated to support a further 520 jobs, €21 million in earnings and €46 million in GVA. Therefore, in total we estimate that 3,520 jobs, €112 million in wages and €277 million of GVA are sustained within the Irish economy through the direct, indirect and induced effects of fishing activity at the 10 ports.

This seafood sub-sector, therefore, has an employment multiplier of 1.5 throughout the Irish economy – meaning that for every direct fishing job within the port areas, an additional half a job is supported elsewhere in the Irish economy.

Outside the Agriculture, forestry & fishing sector, commercial fishing's employment impact was strongest within the Wholesale & retail and Accommodation & food sectors – collectively supporting 595 jobs across Ireland. In GVA terms, the Wholesale & retail and Manufacturing sectors experienced some of the largest benefits, generating GVA of €36.6 million and €18.2 million respectively.

Fig. 35: Sectoral benefits of the commercial fishing sub-sector, 2018

Ports Commercial Fishing	Ireland		
	GVA (€m)	Employment	Wages (€m)
Agriculture, forestry & fishing	161.5	2,405	66.7
Mining & quarrying	0.1	0	0.0
Manufacturing	18.2	60	2.6
Electricity, gas, steam	2.3	5	0.3
Water supply	0.5	0	0.1
Construction	0.8	15	0.6
Wholesale & retail	36.6	480	18.3
Transportation & storage	6.4	70	2.9
Accommodation & food	4.1	115	3.1
Information & communications	1.7	5	0.3
Financial & insurance	6.8	25	1.4
Real estate	16.8	105	5.8
Professional, scientific & technical	9.5	75	3.7
Administration & support	2.4	10	0.4
Public administration	0.8	10	0.5
Education	2.5	40	2.0
Human health	3.3	50	2.2
Arts, entertainment & recreation	1.3	15	0.6
Other service activities	1.1	25	0.9
Total	**277**	**3,520**	**112**

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

11 Gross Value Added (GVA) is the difference between the value of goods and services produced by a business or a sector, and the cost of raw materials and other inputs which are used in production. It is essentially a measure of the value added to the services or products provided by a sector or firm.

3.2 Regional estimates

The port's peripheral locations around Ireland's coastline ensures that the resulting economic benefits are widely spread across Ireland's NUTS3 regions. Except for the mid-west and the midlands, all of Ireland's regions had at least one of the 10 ports based within their boundaries. However, these regions will still benefit indirectly from the activity at the ports via supply chain and consumer spending. The border and south-west regions collectively account for five of the 10 port areas and as a result record the largest number of fishing businesses – 173 and 202 respectively. Furthermore, the south-west region was home to Castletownbere, the largest fishing port in employment terms, while Killybegs, the largest fishing port in turnover terms, is found in the border region.

Fig. 36: Port commercial fisheries by NUTS3 region, 2018

NUTS3 regions	Number of Fisheries	Turnover (€m)
Border	173	104
West	103	9
Mid-West	0	0
Mid-East	32	20
South-West	202	84
South-East	100	44
Dublin	66	26
Midlands	0	0
Ireland	**676**	**287**

Source: *BIM, Perceptive Insight*

The largest share of the ports' direct fishing employment is therefore found in the south-west and border regions, collectively accounting for over half of the fishing total. The south-west enjoys the largest total employment benefits resulting from ports' fishing activity. We estimate that 1,100 jobs were sustained in this region either directly, via supply chain spending and through the resulting consumer spending benefits. However, the regional employment multipliers associated with the ports' fishing sector are found to be stronger within the other regions.[12] The border region's employment multiplier was stronger than that of the south-west (1.6 compared to 1.4) and as a result both the level of indirect and induced employment benefits were higher.

Fig. 37: Employment benefits of the commercial fishing sub-sector, NUTS3 regions, 2018

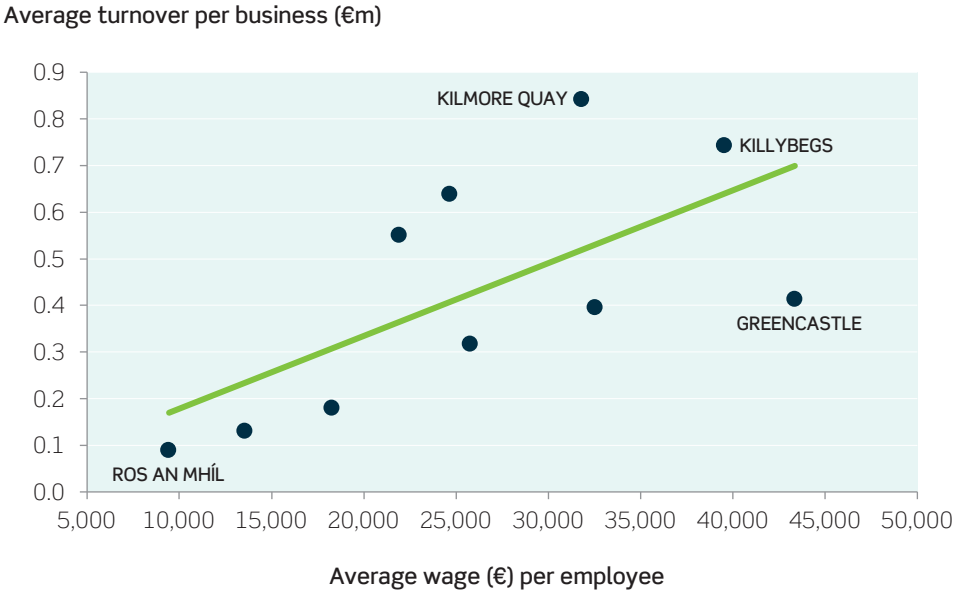
Ports Commercial Fishing	Employment			
	Direct	Indirect	Induced	Total
Border	580	200	155	935
West	170	40	25	235
Mid-West	0	10	10	20
Mid-East	180	65	40	285
South-West	795	175	130	1,100
South-East	350	110	75	535
Dublin	200	105	75	375
Midlands	0	20	10	30
Ireland	**2,275**	**725**	**520**	**3,520**

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

12 Multipliers measure the scale of indirect and induced impacts to direct activity by dividing total impact by the direct.

An analysis of average wages within the commercial fishing sector at the ports show a strong relationship between the relative size of the businesses and the wages paid to their employees. The survey results show that Killybegs and Greencastle (both within the border region) represent much larger fishing enterprises (in turnover terms) and at the same time they record some of the highest average wages. Meanwhile, Ros an Mhíl's (west region) fisheries are relatively small in comparison and record some of the lowest average wages.

Fig. 38: Average commercial fishing wages across the port areas, 2018



Source: *Oxford Economics, Perceptive Insight*

The above observations help explain the differences in average wages across the regions. It is estimated that €24 million in wages were paid to fishing employees based at ports within the border region. This was the largest value across the eight regions. Direct earnings in the border region were therefore larger than that of the south-west which had higher employment levels. As touched on above, this was due to average wages paid to fishing employees within the border region being significantly higher than that of the collective ports' average. (€41,000 in border based ports versus €28,000 across all 10 ports). The wage benefits in the border region rose further to €36 million after we include the indirect and induced wage benefits.

Fig. 39: Wage benefits of the commercial fishing sub-sector, NUTS3 regions, 2018

Ports Commercial Fishing	Wages (€m)			
	Direct	Indirect	Induced	Total
Border	23.7	7.1	5.4	36.1
West	1.6	1.6	1.1	4.4
Mid-West	0.0	0.5	0.4	0.8
Mid-East	4.5	2.6	1.6	8.7
South-West	17.5	7.0	5.1	29.6
South-East	9.1	4.3	3.1	16.6
Dublin	6.5	4.8	3.6	14.9
Midlands	0.0	0.8	0.4	1.2
Ireland	**63**	**29**	**21**	**112**

Source: *Oxford Economics, Perceptive Insight, CSO*

It therefore follows that the border and south-west also enjoy the highest levels of direct GVA associated with commercial fishing activity at the ports. Border based fishing generated €59 million in GVA in 2018, whereas fisheries at ports within the south-west supported close to €45 million. After considering the supply chain expenditure and induced GVA impacts these totals increase further to €94 million and €75 million respectively, accounting for close to 60% of the ports' total across Ireland (€277 million).

Fig. 40: GVA benefits of commercial fishing sub-sector, NUTS3 regions, 2018

Ports Commercial Fishing	GVA (€m)			
	Direct	Indirect	Induced	Total
Border	58.6	22.1	13.2	93.9
West	4.7	3.4	2.0	10.1
Mid-West	0.0	1.1	0.6	1.7
Mid-East	11.4	5.8	3.2	20.4
South-West	44.8	19.1	10.6	74.5
South-East	24.1	9.6	5.6	39.2
Dublin	11.9	13.5	9.9	35.2
Midlands	0.0	1.1	0.6	1.7
Ireland	**155**	**76**	**46**	**277**

Source: *Oxford Economics, Perceptive Insight, CSO*

3.3 Taxation estimates

Commercial fishing activity at the ports will provide further benefits through the generation of tax income towards 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 fishing's direct tax contribution equated to €14 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 fishing's wider supply chain, in addition to net taxes on input purchases and sectoral taxation on production less subsidies. Combined, these represent an additional €7 million in revenue towards public services. Furthermore, 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 €19 million in tax revenue.

Fig. 41: Fiscal benefits by channel of impact, 2018

Ports Commercial Fishing	Total tax estimates (€m)		
	Direct	Indirect	Induced
Agriculture, forestry & fishing	13.6	-2.5	-0.2
Mining & quarrying	0.0	0.0	0.0
Manufacturing	0.0	1.1	9.5
Electricity, gas, steam	0.0	0.1	0.5
Water supply	0.0	0.0	0.3
Construction	0.0	0.1	0.4
Wholesale & retail	0.0	3.3	1.0
Transportation & storage	0.0	1.4	0.6
Accommodation & food	0.0	0.0	2.2
Information & communications	0.0	0.1	0.6
Financial & insurance	0.0	1.7	0.6
Real estate	0.0	0.5	2.0
Professional, scientific & technical	0.0	0.9	0.2
Administration & support	0.0	0.1	0.3
Public administration	0.0	0.1	0.2
Education	0.0	0.0	0.1
Human health	0.0	0.0	0.3
Arts, entertainment & recreation	0.0	0.0	0.2
Other service activities	0.0	0.0	0.5
Total	**14**	**7**	**19**

Source: *Oxford Economics, Perceptive Insight, CSO*

Therefore, the commercial fishing sub-sector of the seafood sector is estimated to have generated €40 million in total fiscal benefits in 2018. This total was made up of €20 million in employment/labour related tax, €7 million in corporation tax, €12 million in taxation associated with the spending of wages and a net tax contribution of €1 million through taxation on inputs and production.[13]

13 Net tax position refers to taxes less subsidies.

Fig. 42: Fiscal benefits by taxation category, 2018

Ports Commercial Fishing	Total tax estimates (€m)				
	Labour tax	Corporation tax	Production tax	Input purchases tax	Tax on consumption
Agriculture, forestry & fishing	11.6	2.7	-3.9	0.4	0.0
Mining & quarrying	0.0	0.0	0.0	0.0	0.0
Manufacturing	0.7	0.4	0.1	0.1	9.4
Electricity, gas, steam	0.1	0.0	0.1	0.1	0.3
Water supply	0.0	0.0	0.2	0.0	0.2
Construction	0.1	0.0	0.0	0.0	0.3
Wholesale & retail	2.2	1.5	0.2	0.3	0.0
Transportation & storage	0.4	0.3	0.3	1.0	-0.1
Accommodation & food	0.6	0.2	0.1	0.2	1.2
Information & communications	0.1	0.1	0.0	0.0	0.4
Financial & insurance	0.5	1.0	0.1	0.6	0.1
Real estate	1.1	0.1	0.7	0.4	0.2
Professional, scientific & technical	0.8	0.2	-0.1	0.2	0.1
Administration & support	0.1	0.0	0.0	0.0	0.3
Public administration	0.2	0.0	0.0	0.1	0.0
Education	0.7	0.0	0.0	0.1	-0.5
Human health	0.7	0.0	0.0	0.0	-0.3
Arts, entertainment & recreation	0.2	0.0	0.0	0.0	0.0
Other service activities	0.2	0.0	0.0	0.1	0.2
Total	**20**	**7**	**-2**	**4**	**12**

Source: *Oxford Economics, Perceptive Insight, CSO*

4. The impact of aquaculture

4.1 Ireland estimates

Aquaculture is the smallest of the three port seafood segments across GVA, employment and wages metrics. By supplementing BIM's own seafood businesses register with the findings from the seafood survey, we estimate that aquaculture sector at the port economies generated close to €97 million in turnover in 2018.

We estimate that aquaculture at the ports directly provided 795 jobs, €19 million of associated wages and €49 million in GVA contributions to GDP (**Fig. 43**).

Fig. 43: Estimated benefits of the port's aquaculture sub-sector, Ireland, 2018

Ports Aquaculture	Ireland		
	GVA (€m)	Employment	Wages (€m)
Direct	49	795	19
Indirect	23	280	10
Induced	14	155	6
Total	**86**	**1,230**	**35**

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

The supply chain analysis shows that local aquaculture businesses spent €48 million procuring goods and services as part of their operations in 2018. Close to €43 million of this spend (90%) was retained within the Irish economy – a share which was slightly smaller than that of the commercial fishing sub-sector of port seafood (95%).

Over half (54%) of aquaculture's total procurement spend was used purchasing seafood related produce – therefore, the agricultural, forestry & fishing sector was the largest beneficiary of this spend. After this, aquaculture businesses spent most within the manufacturing and wholesale & retail sectors, €5.6 million and €5.5 million respectively. Although the spend in these sectors were smaller than that within the agricultural, forestry & fishing (seafood) sector, they represented less of a leakage to the Irish economy through imports.

Fig. 44: Procurement spend, ports' aquaculture sub-sector, 2018

Sector	Procurement by source (€m)		Total (€m)
	Domestic	Imports	
Agriculture, forestry & fishing	21.3	4.5	25.8
Manufacturing	5.4	0.1	5.6
Wholesale & retail	5.3	0.2	5.5
Transportation & storage	3.6	0.0	3.6
Financial & insurance	2.9	0.0	3.0
Real estate	1.2	0.0	1.2
Professional, scientific & technical	2.9	0.0	3.0
Total	**43**	**5**	**48**

Source: *Oxford Economics, Perceptive Insight*

By modelling the supply chain spending through the input-output tables we estimate that aquaculture's indirect impacts sustained 280 jobs, €10 million in wages and GVA contribution to GDP of €23 million in 2018.

In addition to the above, a further round of benefits is sustained via the consumer spending of those employed in aquaculture related activity at the ports and within the broader supply chain of these businesses. These induced impacts are estimated to support a further 155 jobs across Ireland, with an associated €6 million in earnings and €14 million in GVA. Overall, aquaculture-based activity across the 10 ports is estimated to sustain 1,230 jobs, €35 million in wages and €86 million of GVA.

These benefits are spread across several industry sectors. In overall terms, the agricultural, forestry & fishing sector is estimated to enjoy the majority of the resulting economic benefits. These include 955 jobs, €24 million in wages and €57 million in GVA. Following this, the wholesale & retail sector benefited most from aquaculture activity across the ports. We estimate that aquaculture supported 80 wholesale & retail jobs throughout Ireland, with an associated €3 million in wages and €6.1 million contribution to GDP.

Fig. 45: Sectoral benefits of the aquaculture sub sector, Ireland, 2018

Ports Aquaculture	Ireland		
	GVA (€m)	Employment	Wages (€m)
Agriculture, forestry & fishing	56.6	955	23.8
Mining & quarrying	0.1	0	0.0
Manufacturing	4.0	15	0.6
Electricity, gas, steam	1.0	5	0.1
Water supply	0.2	0	0.0
Construction	0.3	5	0.2
Wholesale & retail	6.1	80	3.0
Transportation & storage	2.5	30	1.1
Accommodation & food	1.2	35	0.9
Information & communications	0.5	0	0.1
Financial & insurance	2.1	10	0.4
Real estate	5.1	30	1.7
Professional, scientific & technical	2.8	20	1.1
Administration & support	0.7	5	0.1
Public administration	0.3	5	0.2
Education	0.7	10	0.6
Human health	1.0	15	0.7
Arts, entertainment & recreation	0.4	5	0.2
Other service activities	0.4	10	0.3
Total	**86**	**1,230**	**35**

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

4.2 Regional estimates

Port aquaculture activity is most strongly concentrated within the border and south-west regions. Once again, this is the result of five of the 10 ports belonging to these two regions. Two of which are Castletownbere and Killybegs, among the largest of the ports in terms of aquaculture related turnover. The dominance of these regions in relation to the ports' aquaculture presence is similarly demonstrated in terms of the number of businesses. BIM estimates that there were close to 120 aquaculture related businesses across the 10 port economies and over 80% of these are found within the south-west and border regions.

Fig. 46: Aquaculture producers by NUTS3 region, 2018

NUTS3 regions	Number of producers	Turnover (€m)
Border	27	25.6
West	5	25.5
Mid-West	0	0.0
Mid-East	0	0.0
South-West	72	38.5
South-East	14	6.6
Dublin	2	0.4
Midlands	0	0.0
Ireland	**120**	**97**

Source: *BIM, Perceptive Insight*

It follows therefore, that the economic impact of the aquaculture element is strongest in the border and south-west. In total, our model shows that aquaculture related activity at the ports has the strongest impact within the south-west region, with a direct GVA contribution to GDP of €20 million in 2018. However, this increases to €31 million after we consider the supply chain and consumer spending related activity the sector supports elsewhere across the Irish economy. These indirect and induced impacts are not only associated with the employment and spending of aquaculture-based businesses within the south-west region itself. They will also include economic spill over impacts originating from the remaining ports located in other regions.

Fig. 47: GVA benefits of aquaculture, NUTS3 regions, 2018

Ports Aquaculture	GVA (€m)			
	Direct	Indirect	Induced	Total
Border	13.2	3.6	3.0	19.8
West	12.1	5.6	2.8	20.4
Mid-West	0.0	0.6	0.2	0.7
Mid-East	0.0	0.7	0.3	1.1
South-West	19.8	7.0	4.1	30.9
South-East	3.6	2.4	1.1	7.1
Dublin	0.2	2.9	2.0	5.1
Midlands	0.0	0.4	0.2	0.6
Ireland	**49**	**23**	**14**	**86**

Source: *Oxford Economics, Perceptive Insight, CSO*

The south-west region also enjoys the strongest employment benefits associated with aquaculture activity across the 10 ports. Direct aquaculture-based employment is estimated to represent 350 jobs throughout the region. However, this increases due to supply chain and consumer spending. Collectively, these sustain an additional 135 jobs across the south-west region. In total, aquaculture related activity across the 10 ports is estimated to support 485 jobs within the south-west region. This total is estimated to be stronger than that of both the border and west regions, where port aquaculture supported a total of 280 and 255 jobs respectively.

Fig. 48: Employment benefits of aquaculture, NUTS3 regions, 2018

Ports Aquaculture	Employment			
	Direct	Indirect	Induced	Total
Border	215	35	35	280
West	130	90	35	255
Mid-West	0	10	0	10
Mid-East	0	10	5	15
South-West	350	85	50	485
South-East	95	30	15	140
Dublin	5	15	15	35
Midlands	0	5	5	10
Ireland	**795**	**280**	**155**	**1,230**

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

The south-west region also enjoys the strongest wage benefits resulting from aquaculture related activity at the ports. Aquaculture employees within the south-west region's three ports received €7.1 million in wages in 2018. This total increased to 11.9 million after we consider the earnings for those employed within the regional supply chain and the consumer spending this supports. The west enjoyed the second largest earnings total associated with the port aquaculture activity with an estimated €8.9 million.

Fig. 49: Wage benefits of aquaculture, NUTS3 regions, 2018

Ports Aquaculture	Wages (€m)			
	Direct	Indirect	Induced	Total
Border	5.7	1.2	1.2	8.2
West	4.4	3.0	1.5	8.9
Mid-West	0.0	0.3	0.1	0.4
Mid-East	0.0	0.4	0.1	0.5
South-West	7.1	2.9	1.9	11.9
South-East	1.6	1.1	0.6	3.3
Dublin	0.1	0.8	0.6	1.5
Midlands	0.0	0.3	0.1	0.4
Ireland	**19**	**10**	**6**	**35**

Source: *Oxford Economics, Perceptive Insight, CSO*

4.3 Taxation estimates

Aquaculture activity at the ports provides further benefits through the generation of tax income towards 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 aquaculture direct tax contribution equated to €5 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 sub-sector's wider supply chain, in addition to net taxes on input purchases and sectoral taxation on production less subsidies. Combined, these represent a negative impact of €1 million, mainly due to the prominence of agriculture within the supply chain. Furthermore, 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 €6 million in tax revenue.

Fig. 50: Fiscal benefits by channel of impact, 2018

Ports Aquaculture	Total tax estimates (€m)		
	Direct	Indirect	Induced
Agriculture, forestry & fishing	4.7	-3.5	-0.1
Mining & quarrying	0.0	0.0	0.0
Manufacturing	0.0	0.2	3.0
Electricity, gas, steam	0.0	0.1	0.2
Water supply	0.0	0.0	0.1
Construction	0.0	0.0	0.1
Wholesale & retail	0.0	0.4	0.3
Transportation & storage	0.0	0.6	0.2
Accommodation & food	0.0	0.0	0.7
Information & communications	0.0	0.0	0.2
Financial & insurance	0.0	0.5	0.2
Real estate	0.0	0.2	0.6
Professional, scientific & technical	0.0	0.3	0.1
Administration & support	0.0	0.0	0.1
Public administration	0.0	0.0	0.1
Education	0.0	0.0	0.0
Human health	0.0	0.0	0.1
Arts, entertainment & recreation	0.0	0.0	0.1
Other service activities	0.0	0.0	0.1
Total	**5**	**-1.0**	**6**

Source: *Oxford Economics, Perceptive Insight, CSO*

Therefore, in total the aquaculture element of the seafood sector is estimated to have generated €10 million in fiscal benefits in 2018. This total was made up of €7 million in employment/labour related tax, €2 million in corporation tax, €4 million in taxation associated with the spending of wages. This total was slightly reduced as a result of the net tax deficit position (€3 million) accrued through the taxation on inputs and production.[14]

14 Net tax position refers to taxes less subsidies.

Fig. 51: Fiscal impact by taxation category, 2018

Ports Aquaculture	Total tax estimates (€m)				
	Labour tax	Corporation tax	Production tax	Input purchases tax	Tax on consumption
Agriculture, forestry & fishing	4.6	1.0	-5.0	0.6	0.0
Mining & quarrying	0.0	0.0	0.0	0.0	0.0
Manufacturing	0.1	0.1	0.0	0.0	3.0
Electricity, gas, steam	0.0	0.0	0.0	0.0	0.1
Water supply	0.0	0.0	0.1	0.0	0.1
Construction	0.0	0.0	0.0	0.0	0.1
Wholesale & retail	0.4	0.3	0.0	0.0	0.0
Transportation & storage	0.2	0.1	0.1	0.4	0.0
Accommodation & food	0.2	0.1	0.0	0.1	0.4
Information & communications	0.0	0.0	0.0	0.0	0.1
Financial & insurance	0.1	0.3	0.0	0.2	0.0
Real estate	0.3	0.0	0.2	0.1	0.1
Professional, scientific & technical	0.2	0.1	0.0	0.1	0.0
Administration & support	0.0	0.0	0.0	0.0	0.1
Public administration	0.1	0.0	0.0	0.0	0.0
Education	0.2	0.0	0.0	0.0	-0.2
Human health	0.2	0.0	0.0	0.0	-0.1
Arts, entertainment & recreation	0.1	0.0	0.0	0.0	0.0
Other service activities	0.1	0.0	0.0	0.0	0.1
Total	**7**	**2**	**-4**	**2**	**4**

Source: *Oxford Economics, Perceptive Insight, CSO*

5. The impact of fish processing

5.1 Ireland estimates

The fish processing sector consists of close to 60 individual businesses across the 10 ports. Although these business numbers are relatively small in comparison to that of commercial fishing, the fish processing sector offers significant economic benefits and has close linkages with the rest of the seafood sector.

Using the combination of both the seafood survey and BIM's own industry data, we estimate that fish processing at the ports directly provided 1,705 jobs, €55 million of wages and €161 million of GVA in Ireland (**Fig. 52**).

Fig. 52: Estimated benefits of the fish processing sub-sector, Ireland, 2018

Fish Processing	Ireland		
	GVA (€m)	Employment	Wages (€m)
Direct	161	1,705	55
Indirect	136	2,080	68
Induced	50	570	23
Total	**347**	**4,355**	**145**

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

Once again, the analysis uses information gleaned from the seafood survey to understand how much the ports' processors spend on procurement and where it takes place. As expected, the results show that the seafood sector itself is a prominent component of the port-based processors supply chain. We estimate that 80% of the total processor procurement spend was seafood related and therefore attributable to the agricultural, forestry & fishing sector (€250 million). Wholesale & retail and transportation & storage were sectors which benefited the most from the remaining procurement spend, to the tune of €21 million and €18 million respectively.

Fig. 53: Procurement spend, port's fish processing sub-sector, 2018

Sector	Procurement by source (€m)		Total (€m)
	Domestic	Imports	
Agriculture, forestry & fishing	216.4	33.7	250.1
Manufacturing	12.0	0.5	12.5
Wholesale & retail	17.8	2.9	20.7
Transportation & storage	16.1	1.4	17.5
Financial & insurance	5.0	0.1	5.1
Real estate	0.7	0.0	0.7
Professional, scientific & technical	5.0	0.1	5.1
Total	**273**	**39**	**312**

Source: *Oxford Economics, Perceptive Insight*

This spending will in turn create additional demand further down the supply chain and create further 'rounds' of economic impacts throughout the economy – otherwise known as the multiplier effect. Using the published input-output tables we estimate that these indirect benefits are enough to support a further 2,080 jobs, €68 million in wages and €136 million in GVA.

Finally, as those both directly and indirectly employed spend their wages this will support additional induced benefits across the economy. These benefits tend to be more geared towards the Hospitality and Wholesale & retail sector due to consumer spending patterns. Our model shows the resulting induced benefits were enough to support an additional 570 jobs, €23 million in wages and a further €50 million GVA contribution to GDP. Consequently, the fish processing sector within the 10 ports is estimated to have sustained 4,355 jobs, €145 million in wages and €347 million in GVA.

A sectoral breakdown of these results show that the Agriculture, forestry & fishing and Manufacturing sectors account for a significant share of the overall benefits. This is somewhat unsurprising given that the processing sector itself is classified within the broader Manufacturing sector and seafood is the most prominent supplier to the sector. However, the manufacturing GVA total is significantly larger than that of the Agriculture, forestry & fishing sector. Equally, the manufacturing employment total was almost 10% larger than that of the Agriculture, forestry & fishing sector, however the manufacturing GVA total was over twice that of the Agriculture, forestry & fishing. These differences are strongly influenced by contrasting average productivity across the separate industries.

Outside of these, the processing sector's impacts are estimated to be strongest within the Wholesale & retail sector, supporting 300 jobs, €11.5 million in wages and €23 million in GVA.

Fig. 54: Sectoral benefits of the fish processing sub-sector, Ireland, 2018

Ports Fish Processing	Ireland		
	GVA (€m)	Employment	Wages (€m)
Agriculture, forestry & fishing	77.0	1,615	48.4
Mining & quarrying	0.7	5	0.2
Manufacturing	178.1	1,765	57.1
Electricity, gas, steam	6.0	20	0.8
Water supply	0.8	0	0.1
Construction	1.4	25	1.0
Wholesale & retail	23.0	300	11.5
Transportation & storage	10.6	120	4.9
Accommodation & food	4.5	130	3.4
Information & communications	2.1	5	0.4
Financial & insurance	5.5	20	1.2
Real estate	15.8	95	5.4
Professional, scientific & technical	8.3	65	3.3
Administration & support	2.7	10	0.4
Public administration	1.0	15	0.6
Education	2.7	40	2.2
Human health	3.6	60	2.4
Arts, entertainment & recreation	1.6	20	0.7
Other service activities	1.5	40	1.3
Total	**347**	**4,355**	**145**

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

5.2 Regional estimates

BIM data shows that there were fish processing operators based across each of the 10 ports areas in 2018. Killybegs (border region) had both the largest number of these businesses and the largest turnover associated with their activity (€163 million). The second largest port in terms of seafood processing turnover generation was Castletownbere (south-west region) with a total of €72 million in 2018. Just these two ports represent half of the processing sector's turnover total across all 10 ports. Therefore, similarly to the fishing and aquaculture regional picture, both the border and south-west enjoy a significant share of the total processing related benefits.

Fig. 55: Fish processors by NUTS3 region, 2018

Port Regions	Number of processors	Turnover (€m)
Border	16	171
West	8	15
Mid-West	0	0
Mid-East	7	29
South-West	16	158
South-East	9	42
Dublin	7	58
Midlands	0	0
Ireland	**63**	**473**

Source: *BIM, Perceptive Insight*

Our model shows that the border region enjoyed the strongest GVA impacts associated with the fish processing activity across the 10 port areas. The Greencastle and Killybegs ports both fall within this region and together their processing sectors directly generated €49 million in GVA. This total increases to €103 million after we include both the supply chain and consumer spending relating impacts. Once again, these indirect impacts are not limited to the processing activity taking place in Greencastle and Killybegs but can represent economic leakages originating from other ports found in separate regional economies.

GVA impacts associated with processing activity at our 10 main ports, generated the second strongest benefits within the south-west region. Once again, much of this is the result of the presence of Castletownbere, however, An Daingean and Union Hall also make notable contributions (accounting for over half of the direct processing GVA within the region). In total, the processing sector across the 10 ports generated €87 million of GVA within the south-west's economy – over a quarter of the national total.

Fig. 56: GVA benefits of the fish processing sub-sector, NUTS3 regions, 2018

Ports Fish Processing	GVA (€m)			
	Direct	Indirect	Induced	Total
Border	49	40	14	103
West	7	8	3	18
Mid-West	0	6	1	6
Mid-East	14	11	6	31
South-West	46	31	10	87
South-East	20	16	4	40
Dublin	26	20	12	57
Midlands	0	4	1	5
Ireland	**161**	**136**	**50**	**347**

Source: *Oxford Economics, Perceptive Insight, CSO*

Similarly, employment benefits associated with the ports' processing sector were strongest within the border and south-west regions. Direct employment within the border region (545 jobs) was the strongest among the six regions that had ports located within their geographies. Furthermore, the border region had a stronger employment multiplier outside of the mid-east and as a result recorded the largest number of total jobs (1,405 jobs) supported by port related fish processing.

Fig. 57: Employment benefits of the fish processing sub-sector, NUTS3 regions, 2018

Ports Fish Processing	Employment			
	Direct	Indirect	Induced	Total
Border	545	695	165	1,405
West	140	140	35	320
Mid-West	0	90	10	100
Mid-East	80	145	70	295
South-West	470	465	120	1,055
South-East	230	265	60	555
Dublin	240	205	95	535
Midlands	0	70	10	85
Ireland	**1,705**	**2,080**	**570**	**4,355**

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

Processing's direct employment related earnings were highest within the border region, equating to an estimated €17.9 million in 2018. This was a significantly larger figure than the equivalent estimate for the south-west (€11.2 million) which recorded the second largest direct employment. These differences are driven by lower average wages in the south-west's processing sector relative to that within border. The survey results show that processing employees in the border region typically earned €33,000 on average in 2018, significantly more than the average within the south-west (€24,000).

The border region's processing sector earnings impact raises still further to €43.4 million after we consider the earnings paid to those employed as a result of the sector's supply chain spend and the spending of those employed both directly and indirectly.

Fig. 58: Wage benefits of the fish processing sub-sector, Ireland's regions, 2018

Ports Fish Processing	Wages (€m)			
	Direct	Indirect	Induced	Total
Border	17.9	19.6	5.8	43.4
West	2.2	4.9	1.5	8.5
Mid-West	0.0	3.1	0.4	3.6
Mid-East	9.9	5.2	2.8	17.9
South-West	11.2	15.4	4.7	31.3
South-East	5.7	8.9	2.5	17.2
Dublin	7.7	8.1	4.4	20.2
Midlands	0.0	2.5	0.5	3.1
Ireland	**55**	**68**	**23**	**145**

Source: *Oxford Economics, Perceptive Insight, CSO*

5.3 Taxation estimates

Processing activity at the ports will provide further benefits through the generation of tax revenues towards 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 processing's direct tax contribution equated to €22 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 sub-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 €26 million due to the prominence of agricultural activity within the supply chain. However, this is almost 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 €24 million in tax revenue.

Fig. 59: Fiscal benefits by channel of impact, 2018

Ports Fish Processing	Total tax estimates (€m)		
	Direct	Indirect	Induced
Agriculture, forestry & fishing	0.0	-35.0	-0.2
Mining & quarrying	0.0	0.1	0.0
Manufacturing	21.7	1.0	12.3
Electricity, gas, steam	0.0	0.5	0.6
Water supply	0.0	0.1	0.4
Construction	0.0	0.2	0.5
Wholesale & retail	0.0	1.6	1.1
Transportation & storage	0.0	2.7	0.6
Accommodation & food	0.0	0.0	2.7
Information & communications	0.0	0.1	0.7
Financial & insurance	0.0	1.3	0.7
Real estate	0.0	0.2	2.2
Professional, scientific & technical	0.0	0.8	0.3
Administration & support	0.0	0.1	0.4
Public administration	0.0	0.1	0.2
Education	0.0	0.0	0.0
Human health	0.0	0.0	0.3
Arts, entertainment & recreation	0.0	0.0	0.3
Other service activities	0.0	0.1	0.5
Total	**22**	**-26**	**24**

Source: *Oxford Economics, Perceptive Insight, CSO*

Therefore, in total the processing element of the seafood sector is estimated to have supported €19 million in fiscal benefits in 2018. This total was made up of €35 million in employment/labour related tax, €8 million in corporation tax, €15 million in taxation associated with the spending of wages and a net tax deficit of €39 million through taxation on inputs and production.[15]

15 Net tax position refers to taxes less subsidies.

Fig. 60: Fiscal benefits by taxation category, 2018

Ports Fish Processing	Total tax estimates (€m)				
	Labour tax	Corporation tax	Production tax	Input purchases tax	Tax on consumption
Agriculture, forestry & fishing	7.8	1.3	-50.1	5.6	0.1
Mining & quarrying	0.1	0.0	0.0	0.0	0.0
Manufacturing	18.9	3.7	0.1	0.1	12.2
Electricity, gas, steam	0.2	0.0	0.2	0.2	0.4
Water supply	0.0	0.0	0.2	0.0	0.2
Construction	0.3	0.0	0.0	0.1	0.3
Wholesale & retail	1.4	1.0	0.1	0.2	0.0
Transportation & storage	0.7	0.4	0.6	1.7	-0.1
Accommodation & food	0.7	0.2	0.1	0.3	1.6
Information & communications	0.1	0.1	0.0	0.0	0.6
Financial & insurance	0.4	0.8	0.1	0.5	0.1
Real estate	1.1	0.1	0.6	0.4	0.2
Professional, scientific & technical	0.7	0.2	-0.1	0.2	0.1
Administration & support	0.1	0.1	0.0	0.0	0.3
Public administration	0.2	0.0	0.0	0.1	0.0
Education	0.7	0.0	0.0	0.1	-0.7
Human health	0.7	0.0	0.0	0.0	-0.4
Arts, entertainment & recreation	0.2	0.0	0.0	0.0	0.0
Other service activities	0.3	0.0	0.0	0.1	0.3
Total	**35**	**8**	**-48**	**9**	**15**

Source: *Oxford Economics, Perceptive Insight, CSO*

6. Total impact of the overall ports' seafood sector

6.1 Seafood sector activity at the ports

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 10 port areas.

However, simply summing the respective benefits of all three sub-sectors (commercial fishing, aquaculture and fish processing) will overestimate the indirect, 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 of some of the impacts.

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 total indirect and induced impacts are calculated by summing the indirect and induced impacts of processing and an 86% and 52% share of the indirect and induced impacts from the respective aquaculture and fishing sub-sectors (as information from the survey interviewees suggest that exports and domestic sales outside the port areas own processors account for 86% and 52% of the respective aquaculture and fishing production). The remainder of the fishing/aquaculture sub-sectors' indirect and induced impacts will already be accounted for in the indirect and induced impacts from the processing sub-sector.

6.2 Ireland estimates

We estimate the seafood activity within the 10 ports produced total direct impacts of 4,775 jobs, with €136 million of associated wages and €366 million of GVA. Through supply chain spending, the ports seafood activity is estimated to create 2,695 additional indirect jobs, alongside €91 million in wages and €195 million of GVA. This level of indirect benefits combines with our direct estimates, to induce a further 970 jobs, €39 million in wages and €86 million in GVA across the Irish economy.

Overall, the seafood sector at the ports is estimated to have sustained 8,445 jobs, €267 million of wages and €646 million of GVA across the Irish economy from direct, indirect and induced effects.

Fig. 61: Estimated benefits of the ports' seafood sector, Ireland, 2018

Ports Seafood Sector	Ireland		
	GVA (€m)	Employment	Wages (€m)
Direct	366	4,775	136
Indirect	195	2,695	91
Induced	86	970	39
Total	**646**	**8,445**	**267**

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

Unsurprisingly, the Agriculture, forestry & fishing sector is the main beneficiary of the ports' seafood activity. In total, the sector benefits to the tune of almost 4,890 jobs, €136 million in wages and €291 million in GVA. Manufacturing is also bolstered, mainly as a result of the significant footprint that fish processing represents within the overall sector. In total, the ports' seafood sector across Ireland is estimated to sustain 1,810 jobs in Manufacturing, alongside €59 million in earnings and €191 million in GVA.

Equally, the Wholesale & retail sector enjoys a significant share of the benefits, accounting for 620 jobs and close to 7% of the overall GVA impact. The remaining benefits are more broadly spread throughout the rest of the Irish economy.

Fig. 62: Sectoral benefits of the ports' seafood sector, Ireland, 2018

Ports Seafood Sector	Ireland		
	GVA (€m)	Employment	Wages (€m)
Agriculture, forestry & fishing	291.1	4,890	136.3
Mining & quarrying	0.9	5	0.3
Manufacturing	190.9	1,810	58.9
Electricity, gas, steam	8.0	25	1.1
Water supply	1.2	5	0.1
Construction	2.1	40	1.5
Wholesale & retail	47.3	620	23.6
Transportation & storage	16.1	180	7.4
Accommodation & food	7.7	220	5.8
Information & communications	3.4	10	0.6
Financial & insurance	10.9	40	2.3
Real estate	28.9	175	9.9
Professional, scientific & technical	15.7	120	6.1
Administration & support	4.6	20	0.7
Public administration	1.7	20	1.0
Education	4.6	70	3.7
Human health	6.1	100	4.2
Arts, entertainment & recreation	2.7	35	1.1
Other service activities	2.4	60	2.0
Total	**646**	**8,445**	**267**

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

An analysis of the port seafood multipliers shows that fish processing has the strongest ability to generate additional economic activity via its procurement and the subsequent consumer spending impacts it generates across the Irish economy. We estimate that ever €1 in direct fish processing GVA within the port economies supports a further €1.1 across Ireland.

Fig. 63: Multipliers by ports' seafood sub-sector, Ireland, 2018

Ports Seafood Sector	Multiplier		
	GVA (€m)	Employment	Wages (€m)
Commercial fishing	1.8	1.5	1.8
Fish processing	2.1	2.6	2.7
Aquaculture	1.8	1.6	1.9
All seafood	**1.8**	**1.8**	**2.0**

Source: *Oxford Economics, Perceptive Insight, CSO*

6.3 Regional estimates

Fig. 64 shows our estimated regional multipliers for GVA, employment and wages. The GVA multipliers range from 1.6 in the south-west region to 2.3 in Dublin. Dublin's higher multiplier is the result of a larger share of indirect and induced impacts relative to direct seafood activity that is based within the region. This means that our total GVA impact estimate in the Dublin region is over twice that of the direct seafood related GVA in the region. The employment multipliers are similar in size but slightly less volatile than that of the GVA multipliers. They range from 1.5 in the south-west to 2.1 in the mid-east. This means that for every 1 direct seafood related job present in Clogherhead (the only one of the 10 ports present in mid-east), 1.1 jobs are sustained elsewhere in the region through the indirect and induced effects. On average, the wage multipliers tend to be stronger than that of both the GVA and employment multipliers. Of the six port regions, the west had the strongest wage multiplier (2.4), closely followed by Dublin (2.3).

Fig. 64: GVA, employment and wage multipliers, NUTS3 regions, 2018

Ports Seafood Sector	Multiplier		
	GVA	Employment	Wages
Border	1.7	1.8	1.7
West	1.9	1.7	2.4
Mid-East	1.9	2.1	1.7
South-West	1.6	1.5	1.9
South-East	1.6	1.7	2.0
Dublin	2.3	1.9	2.3
Ireland	**1.8**	**1.8**	**2.0**

Source: *Oxford Economics, Perceptive Insight, CSO*

The Killybegs and Castletownbere ports are easily the largest of the 10 ports in seafood turnover terms. Combined they account for 50% of the total seafood turnover across the 10 ports. They are equally dominant across all three-seafood related sub-sectors. Accordingly, overall seafood activity was found to be most concentrated in the Border and south-west regions; with both these regions recording the highest levels of direct GVA (**Fig. 65**).

Through the supply chain and induced expenditure, we estimate that both the border (€199 million) and south-west (€177 million) regions experienced the greatest levels of total GVA associated with the ports' seafood sector. This was a result of both the level of direct activity taken place in the first instance, procurement patterns and the sectoral employment compositions of their local economies. The below figure also shows that the economic benefits were not solely isolated to those economies which contain the port areas themselves. None of the 10 ports were located within the mid-west or the midlands and yet these areas generated close to €14 million in GVA as a result of seafood related activity at the ports. These impacts originate from both the supply chain spending of the ports' seafood businesses and the consumer spending patterns of those employed either directly or indirectly as a result.

Fig. 65: GVA benefits of the ports' seafood sector, NUTS3 regions, 2018

Ports Seafood Sector	GVA (€m)			
	Direct	Indirect	Induced	Total
Border	120.3	54.6	23.7	198.6
West	23.7	14.8	6.0	44.6
Mid-West	0.0	6.7	1.2	7.9
Mid-East	25.7	14.4	7.6	47.7
South-West	110.9	47.2	18.7	176.8
South-East	47.6	22.6	8.3	78.6
Dublin	37.6	29.5	18.8	85.9
Midlands	0.0	4.8	1.3	6.1
Ireland	**366**	**195**	**86**	**646**

Source: *Oxford Economics, Perceptive Insight, CSO*

Fig. 66 shows that the south-west and border regions accounted for the greatest levels of both direct and total employment benefits. Direct seafood employment within the south-west and border regions accounted for almost 2,955 jobs or close to two-thirds of the total across all 10 ports.

Fig. 66: Employment benefits of the ports' seafood sector, NUTS3 regions, 2018

Ports Seafood Sector	Employment			
	Direct	Indirect	Induced	Total
Border	1,335	830	275	2,440
West	440	245	80	765
Mid-West	0	105	15	120
Mid-East	260	190	90	540
South-West	1,620	630	230	2,475
South-East	680	345	115	1,140
Dublin	440	270	145	855
Midlands	0	90	20	105
Ireland	**4,775**	**2,695**	**970**	**8,445**

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

As was the case with the individual aquaculture, commercial fishing and fish processing sub-sectors, the border and south-west regions enjoyed the highest levels of direct and total wages resulting from seafood activity across the ports. Differences reflect not only the amount of activity in the local seafood sector but average wage levels in the local economies concerned. In total, the collective seafood sector supported €81 million and €66 million in wages in these regions respectively.

Fig. 67: Wage benefits of the ports' seafood sector, NUST3 regions, 2018

Ports Seafood Sector	Wages (€m)			
	Direct	Indirect	Induced	Total
Border	47.4	24.4	9.7	81.4
West	8.2	8.3	3.3	19.9
Mid-West	0.0	3.6	0.7	4.3
Mid-East	14.4	6.9	3.8	25.0
South-West	35.7	21.5	9.1	66.3
South-East	16.4	12.2	4.7	33.3
Dublin	14.3	11.2	6.8	32.4
Midlands	0.0	3.2	0.9	4.0
Ireland	**136**	**91**	**39**	**267**

Source: *Oxford Economics, Perceptive Insight, CSO*

SEAFOOD'S ADDITIONAL BENEFITS AND SPILLOVER IMPACTS

Outside of the economic contribution noted in this report, the local seafood sector at the ports is likely to provide wider spill-over benefits which are more difficult to quantify. These are wide-ranging and include contributions to local tourism, investment and quality of life. The seafood sector is frequently viewed as an asset to the local tourism sector. Local fishing industries can offer visitors not only fresh gourmet products, but a range of tourism related services such as sea fishing, sea trips and oyster tours for example. Furthermore, by drawing visitors to the local area, this exposes other businesses within the port economies to additional revenue sources. Invariably, the local hospitality sector will enjoy many of these benefits through the potential for increased overnight visitor stays and visitor day trips.

The local port economies also benefit from visiting foreign vessels. Foreign fleet landings are particularly significant in the Killybegs, Castletownbere and An Daingean port areas. One landing agent within these ports noted that they handled close to 600 such landings in 2017, with approximately 10-15 occurring per week on average. As a landing agent for these vessels, they organise the purchase of fuel, provisions, transport and other services required by visiting fishing vessels. Invariably the local economy will benefit from a significant amount of this additional spending. A BIM facilitated consultation with the Monamar Ltd landing agent, revealed that their landings alone generated an estimated €4.5 million for the Castletownbere economy (all of which is not included in our estimates), with fuel invariably being the largest purchase item by foreign vessels.

6.4 Taxation estimates

Seafood activity at the ports provide further benefits through the generation of tax revenues to the Revenue Commissioners.[16] 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 seafood's direct tax contribution equated to €40 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 sub-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 €23 million, mainly because of agriculture's prominence within the fish processing supply chain. However, the indirect deficit is again 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 €39 million in tax revenue.

Fig. 68: Fiscal benefits by channel of impact, 2018

Ports Seafood Sector	Total tax estimates (€m)		
	Direct	Indirect	Induced
Agriculture, forestry & fishing	18.3	-39.3	-0.4
Mining & quarrying	0.0	0.2	0.1
Manufacturing	21.7	1.8	19.8
Electricity, gas, steam	0.0	0.6	1.0
Water supply	0.0	0.1	0.7
Construction	0.0	0.3	0.7
Wholesale & retail	0.0	3.7	1.9
Transportation & storage	0.0	3.9	1.1
Accommodation & food	0.0	0.1	4.4
Information & communications	0.0	0.2	1.2
Financial & insurance	0.0	2.6	1.1
Real estate	0.0	0.6	3.7
Professional, scientific & technical	0.0	1.5	0.5
Administration & support	0.0	0.1	0.6
Public administration	0.0	0.2	0.3
Education	0.0	0.1	0.1
Human health	0.0	0.0	0.5
Arts, entertainment & recreation	0.0	0.1	0.4
Other service activities	0.0	0.2	0.9
Total	**40**	**-23.2**	**39**

Source: *Oxford Economics, Perceptive Insight, CSO*

Therefore, in total the seafood sector across the ports is estimated to have supported €56 million in fiscal benefits in 2018. This total was made up of €57 million in employment/labour related tax, €14 million in corporation tax, €25 million in taxation associated with the spending of wages and a net tax deficit of €40 million through taxation on inputs and production.[17]

16 Total seafood fiscal benefits will not sum to the individual seafood sub-sectors since a share of the aquaculture and commercial fishing benefits will already be accounted for within the processing sub-sector.
17 Net tax position refers to taxes less subsidies.

Fig. 69: Fiscal benefits by taxation category, 2018

Ports Seafood Sector	Total tax estimates (€m)				
	Labour tax	Corporation tax	Production tax	Input purchases tax	Tax on consumption
Agriculture, forestry & fishing	23.6	4.9	-56.4	6.3	0.1
Mining & quarrying	0.1	0.0	0.0	0.0	0.1
Manufacturing	19.4	4.0	0.1	0.2	19.6
Electricity, gas, steam	0.3	0.1	0.3	0.3	0.7
Water supply	0.0	0.0	0.4	0.0	0.4
Construction	0.4	0.0	0.0	0.1	0.5
Wholesale & retail	2.9	2.0	0.3	0.4	0.1
Transportation & storage	1.1	0.7	0.8	2.5	-0.2
Accommodation & food	1.1	0.3	0.1	0.4	2.5
Information & communications	0.2	0.2	0.0	0.0	0.9
Financial & insurance	0.8	1.5	0.2	1.0	0.2
Real estate	1.9	0.2	1.2	0.7	0.4
Professional, scientific & technical	1.3	0.3	-0.2	0.3	0.2
Administration & support	0.1	0.1	0.0	0.0	0.5
Public administration	0.3	0.0	0.0	0.1	0.0
Education	1.2	0.0	0.0	0.1	-1.1
Human health	1.3	0.0	0.0	0.0	-0.7
Arts, entertainment & recreation	0.3	0.0	0.0	0.0	0.0
Other service activities	0.4	0.0	0.0	0.2	0.4
Total	**57**	**14**	**-53**	**13**	**25**

Source: *Oxford Economics, Perceptive Insight, CSO*

7. Conclusions

7.1 The seafood sector in Ireland's 10 main ports

Our analysis has shown that the three channels of seafood activity within the local port economies provides significant economic benefits to the wider national economy.

Overall, the seafood sector at the ports is estimated to have sustained 8,445 jobs, €267 million in wages and €646 million in GVA across Ireland from direct, indirect and induced effects. To put this in context, the total GVA generated by the ports' seafood activity is almost equivalent to the entire agriculture, forestry & fishing sector in the border region.

Over 4,775 of these jobs were provided directly by the local seafood sector within the 10 port economies. This direct employment commanded an estimated €136 million in wages and supported €366 million in GVA.

7.2 Fish processing provides the greatest supply chain benefits

Output per head tends to be higher in fish processing, relative to the aquaculture and commercial fishing components of seafood. As a result, the subsequent indirect and induced impacts are subject to relatively strong multipliers. The fish processing sub-sector is estimated to provide benefits of the following size:

- 1,705 direct jobs and €55 million of wages, producing €161 million of GVA;
- 2,080 indirect jobs, and €68 million of wages, producing €136 million of GVA; and
- 570 induced jobs, and €23 million in wages, producing €50 million of GVA.

In total, the ports' seafood processors are estimated to have sustained 4,355 jobs, €145 million in earnings and €347 million in GVA in 2018.

7.3 Commercial fishing is the most prominent seafood employer

Local commercial fisheries account for the majority of seafood related businesses across the 10 port economies. Although the sector generates less direct GVA than the processing sub-sector, it employs more people directly within the port areas. Accordingly, our analysis shows the economic impact of the fishing element was of the following magnitude in 2018:

- 2,275 direct jobs and €63 million in wages, alongside €155 million in GVA;
- 725 indirect jobs and €29 million in wages, alongside €76 million in GVA; and
- 520 induced jobs, €21 million in wages, alongside €46 million in GVA.

In total, ports' based commercial fishing activity has been estimated to have sustained 3,520 jobs, €112 million in earnings and €277 million in GVA.

7.4 Aquaculture is a significant segment of the ports' seafood sector

Furthermore, our analysis shows that the economic impact of the ports aquaculture sector equates to the following across the Irish economy:

- 795 direct jobs and €19 million in wages, producing €49 million in GVA;
- 280 indirect jobs and €10 million in wages, producing €23 million in GVA; and
- 155 induced jobs and €6 million in wages, producing €14 million in GVA.

7.5 The seafood sector makes significant contributions to peripheral economies

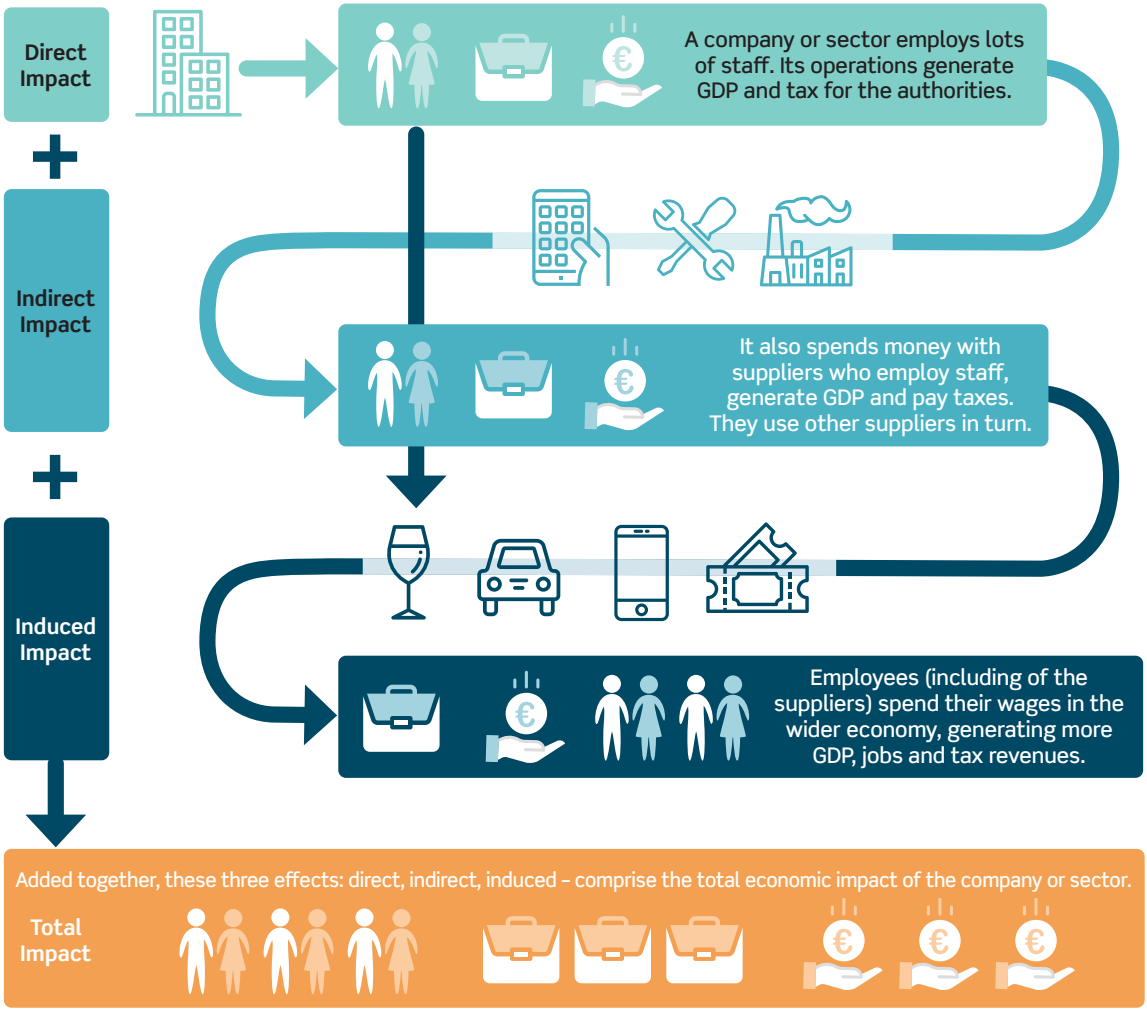
Seafood's important role in the port economies is only further emphasised when we examine their socio-economic makeup. The sectoral structure at the ports are not geared towards faster growing office-based employment which tend to locate in more urban locations. Connected to this, net out-commuting is commonplace across the port areas, the working age population has been in decline and economic inactivity rates are relatively high. Within this context, the seafood sector represents a significant source of employment opportunity which is more closely aligned with the skills of local people.

Appendix 1: 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. 70: 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[18] and national economy:

- **Gross value-added** contribution to Gross Domestic Product (GDP)[19]: 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.[20]

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.

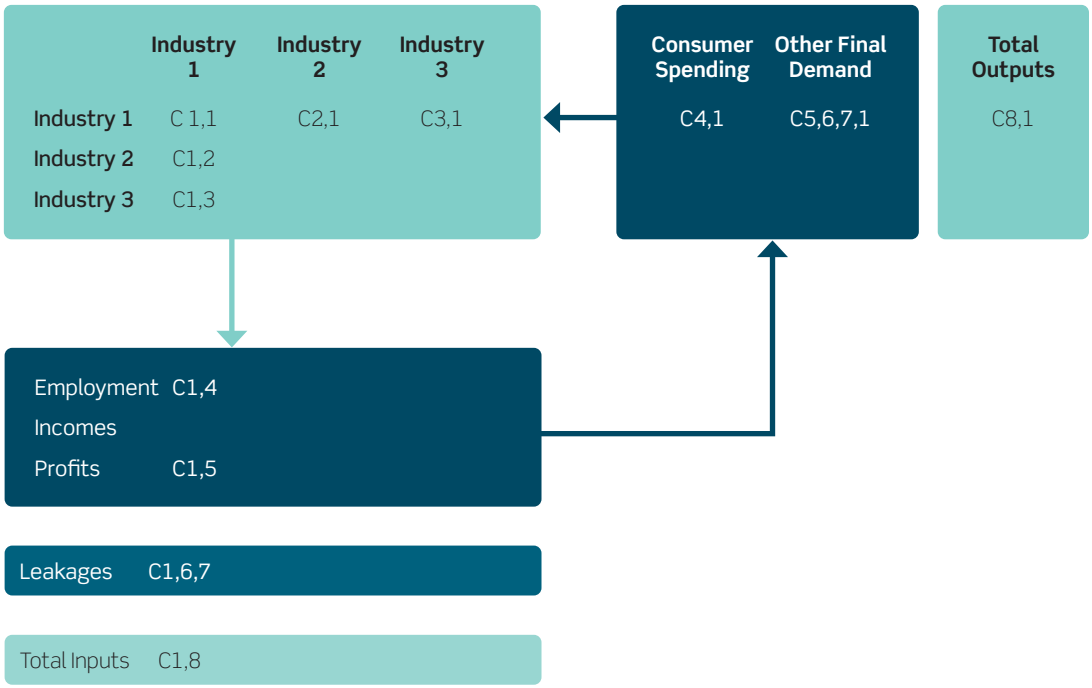
With our estimate of direct output and wages, we then applied sectoral taxation assumptions and calculated the resulting fiscal benefits that would likely be collected by the Revenue Commissioners.

18 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.
19 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.
20 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 71** 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. 71: 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.[21] 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.

21 Due to data availability, the local seafood sector's economic impact can only be localised to the regional level (NUTS3).

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 were 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.

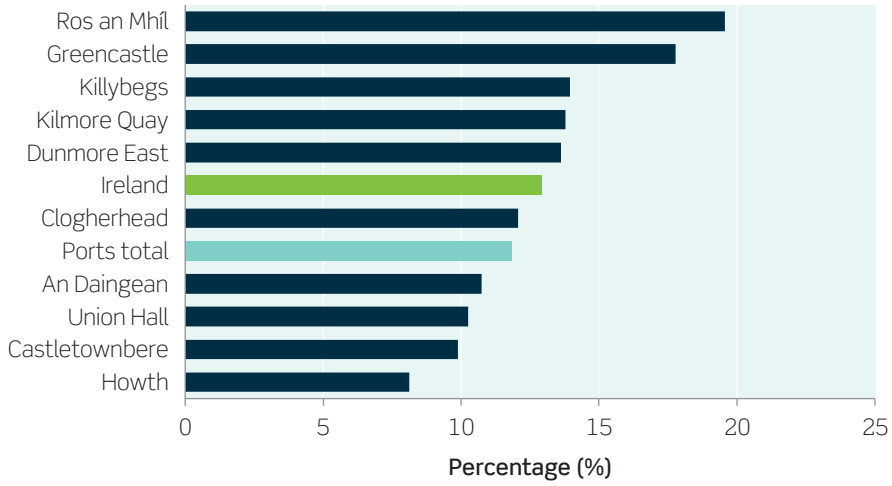
Appendix 2: Socio-economic analysis of the port economies

This section of the report provides a summary of the socio-economic characteristics of the collective local port economies.[22] A large portion of the subsequent analysis draws on Census Small Area Population Statistics published by the Central Statistics Office (CSO).[23]

Economic activity

Unemployment is broadly below average across the port economies. The collective unemployment rate across the 10 ports stood at 11.8% on average, over one percentage point below the national average (12.9%). However, the average disguises a great degree of variation within the individual port economies. Unemployment rates in five of the 10 port areas were found to be above the national average. Unemployment was particularly high in Ros an Mhíl, at 19.6% the unemployment rate was over six percentage points higher than the state average.

Fig. 72: Unemployment rate, port areas, 2016



Source: *CSO Ireland*
Note: *Defined as the share of labour force aged 15 years and over*

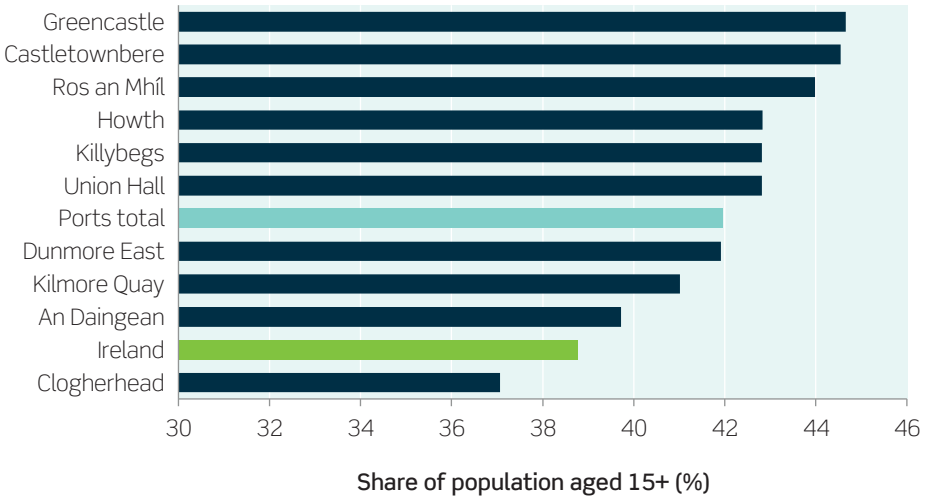
With the exception of the Clogherhead and An Daingean port areas, employment rates are below average across the port economies. Just over 51% of all port area residents aged 15 and over were in employment at the time of the last Census – two percentage points below the national average of 53%.

The reason for the below average unemployment rates alongside below average resident employment rates is high levels of economic inactivity. Economic inactivity is a term used to describe the section of the population which is not in employment and is not actively seeking employment. This catch all definition can include a broad range of people including students, carers, the retired and the long-term sick.

22 The local port economy represents the port itself and its hinterland, as defined as a given port's own electoral division (DED) and those surrounding it.
23 The most recent Census were carried out in both 2011 and 2016.

Almost 42% of all port area residents aged 15 and above were classified as economically inactive as of the latest Census – two percentage points above the state average. Inactivity was highest within the Greencastle and Castletownbere port economies.

Fig. 73: Economic inactivity, port areas, 2016



Source: *CSO Ireland*

A breakdown of the reasons for inactivity shows that nine out of the 10 ports had above average shares of retirees within the overall total. The Castletownbere area had the highest share, with half of all those inactive being classified as retired. Clogherhead was the only port area to have a relatively low retiree representation. However, students make up a relatively large share of the inactive population within Clogherhead (32% compared to 29% across Ireland).

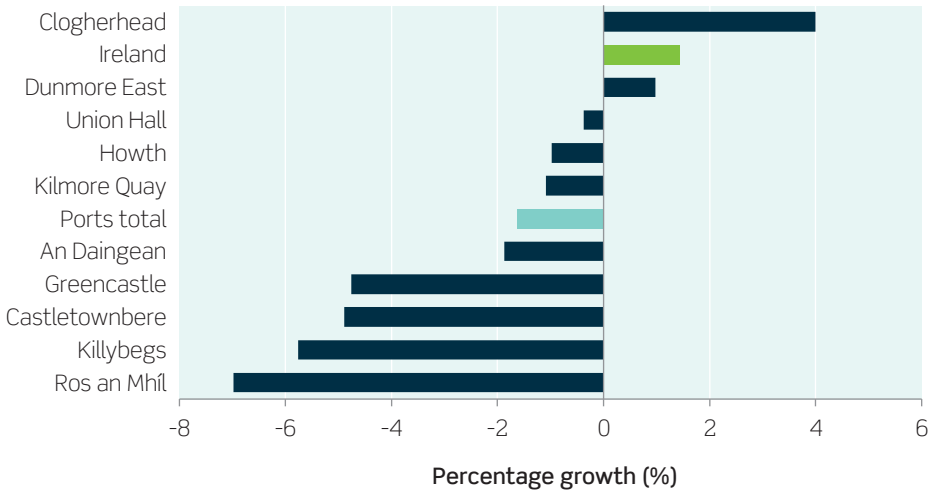
Demographics

The above mentioned economic inactivity levels are influenced by demographic trends. The combined population across the port economies grew by a below average 2.0% in the five years since 2011 – reaching almost 213,000 in 2016. In comparison, population growth across Ireland was 3.8% over the same period. Clogherhead and Howth were the only port areas which experienced above average population growth, growing by 4.7% and 4.4% respectively. Meanwhile, the Castletownbere, Ros an Mhíl, Greencastle and Killybegs port areas experienced contractions in their population levels.

Much of these trends can be explained by the growth in the working age population. As a group, the port economies experienced nearly a 2% fall in the number of residents aged between 15 and 64 between 2011 and 2016, whereas across Ireland this cohort grew by 1.4%. As a result, the share of the population of working age across the ports stood at 62% in 2016 – three percentage points below the national average. None of the port areas recorded an above average working age population share during the last Census.

These trends have significant implications for the local economies. Not only is there less labour to fuel business growth, there is also likely to be less households having children. Consequently, local areas could face slowing or indeed declining population levels which could be exacerbated further by a weakening in the local economy.

Fig. 74: Working age population growth, port areas and nation, 2011-16

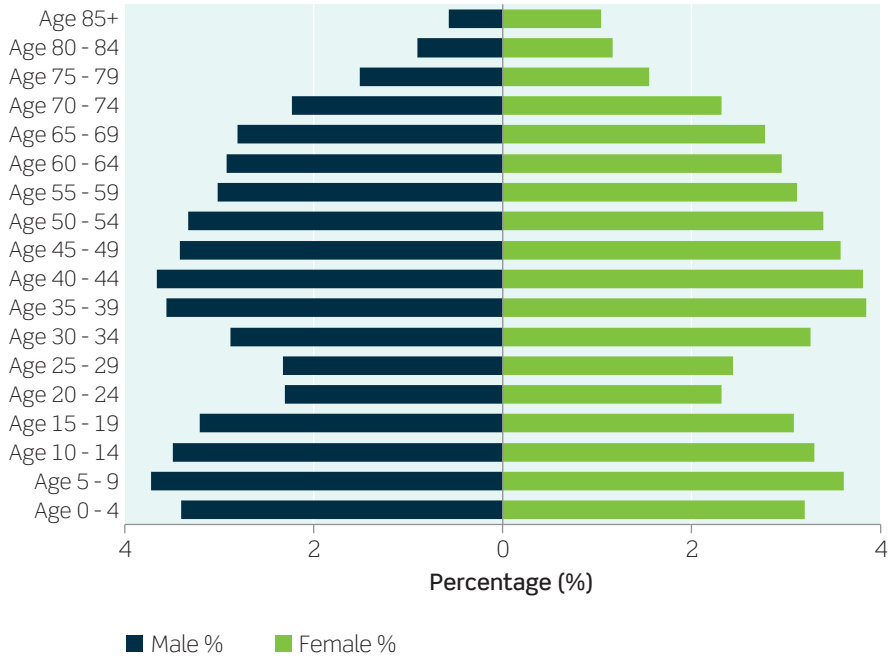


Source: *CSO, Eurostat*

Fig. 75 indicates that as expected there is a noticeably weaker representation of younger working age people residing within the port geographies. Residents between the ages of 25 and 44 accounted for a quarter of the ports' population in 2016. This share was close to five percentage points weaker than that of the national average (30%).

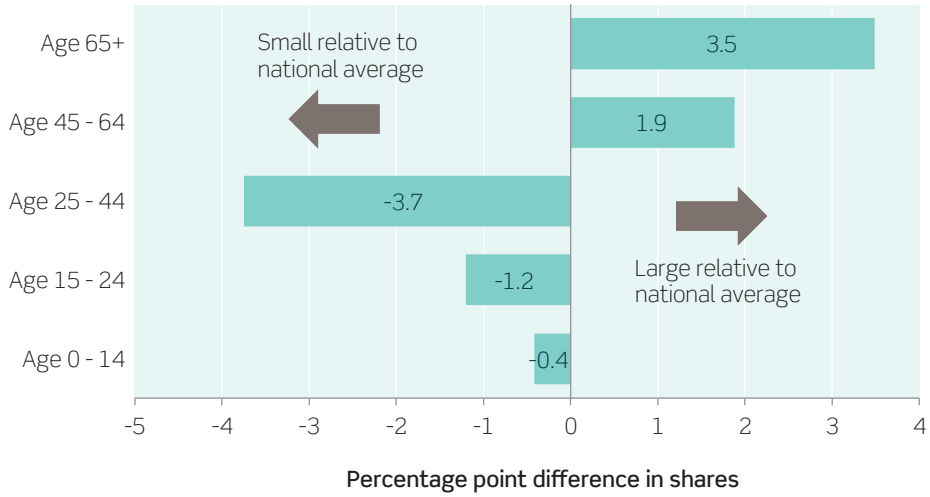
Older people therefore account for an above average share of the local population within the port areas. Those aged 65 and over represented 17% of the total across the port economies in 2016 – compared to the national average of just 13%.

Fig. 75: Age structure, port areas, 2016



Source: *CSO Ireland*

Fig. 76: Age group comparisons, port areas vs nation, 2016



Source: *CSO Ireland*

Economic structure

Workplace employment based in the port economies totalled nearly 46,000 jobs in 2016. Meanwhile, over 86,000 residents were in employment in the same year. Unfortunately, workplace-based employment data for Small Area geographies was only published for the first time in the 2016 Census and therefore we cannot observe employment growth over time within the port areas.[24]

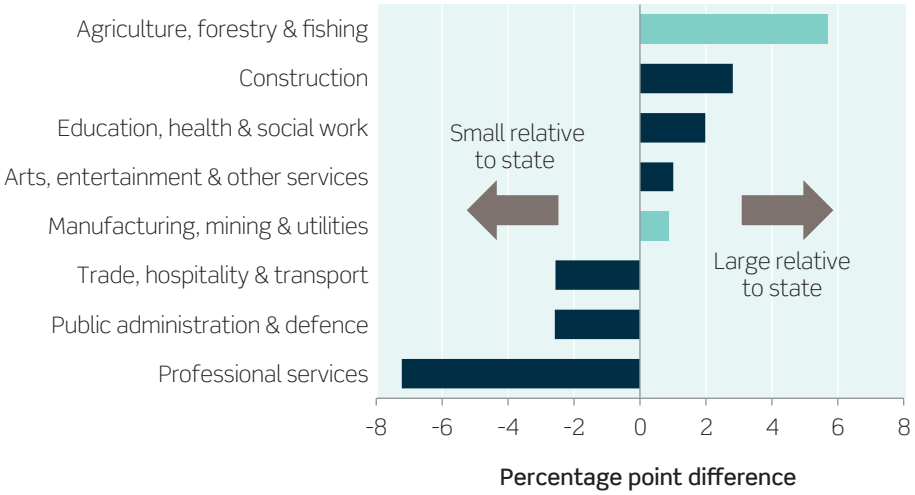
Comparing workplace and residence-based employment shows that net out-commuting is evident across the port areas. Census data suggests that 40,000 more people regularly commuted out of the port economies than those commuting in. This net figure amounts to almost a half of all employed residents within the port economies. This suggests that employment opportunities could be limited locally or that better paid opportunities can be found elsewhere.

An analysis of sectoral employment shows that both the agriculture, forestry & fishing and the manufacturing, mining & utilities sectors are strongly concentrated locally and account for an above average share of local workplace employment.[25] These sectors combined accounted for close to a quarter of local employment within the port economies – a share over 40% larger than the national average (17%).

24 Census 2016 was the first for which data on the 'daytime population' of areas has been published. The daytime population includes persons who indicated they worked or studied in the area, along with the usual residents of that area who do not work or study. This data is presented as workplace zones which can be combined to approximately match the Small Areas output from the Census.

25 'Fishing and aquaculture' fall within 'Agriculture, forestry & fishing' NACE definition and the 'processing and preserving of fish, crustaceans and molluscs' belongs to the 'Manufacturing' sector.

Fig. 77: Sectoral employment structure, port areas vs. state average, 2016



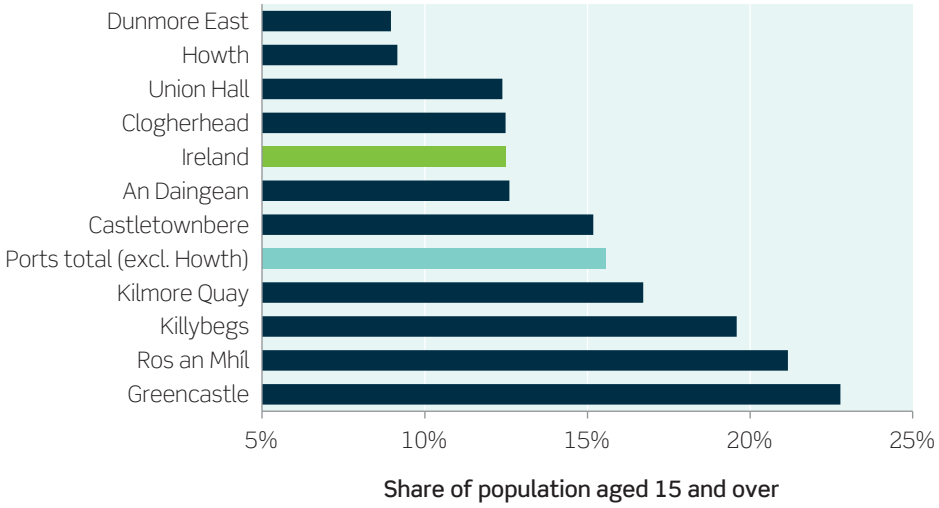
Source: *Oxford Economics, CSO*

Although we do not have access to timeseries employment data, we know from national trends that manufacturing and agriculture, forestry & fishing have been experiencing a long-term contraction in jobs (despite growth in output). Employment has instead been driven by higher value-added private service sectors of the economy. Unfortunately, these growth sectors tend to favour more urban areas, with access to a strong pool of labour and a constant stream of skilled labour entrants (e.g. from higher education). Therefore, the economic outlook for the port areas is challenging.

Economic opportunity and deprivation

Not only are the primary industries important from an employment perspective but they are also likely to be better matched to the skill levels of local people. An above average proportion of residents within the port areas have either low or no formal education. The Howth port area has a significantly larger catchment area in terms of the population – with almost twice the number of people aged 15 and over as the next largest port area. Moreover, the Howth area is within commuting distance to the central Dublin jobs market which heavily skews the educational attainment average across the 10 ports. After excluding Howth, we find that 16% of residents aged 15 and over across the remaining ports had either no formal or primary as their highest level of education completed. This was four percentage points higher than the overall Irish average. Again, given that future growth will be driven by higher skilled activity as the economy becomes increasingly skills hungry, the economic outlook for the port areas is a challenging one.

Fig. 78: No formal/primary education attainment, port areas, 2016



Source: *CSO Ireland*

Given the above trends, the local seafood sector is not just important in terms of providing employment opportunities, it provides employment for those with low levels of education attainment. Published Census data shows that approximately two-thirds of those within the Agriculture, forestry & fishing sector's labour force ceased full-time education by the age of 18, compared to just 39% across the whole economy. Equally, just over 60% of those employed within the fishing and aquaculture sector recorded secondary level or below as their highest level of education – compared to just 34% share across the entire labour force.

Likewise, a below average share of local people within the port economies have higher level qualifications. Just under a quarter of the local people over the age of 15 across the port areas (excluding Howth) are educated to degree level or above – compared to 28% throughout Ireland. As the economy becomes increasingly 'skills-hungry', local communities can be left behind as their skills become increasingly mismatched with what employer's demand. Once again, the seafood sector typically offers employment opportunities which more closely align with the skills of local people at the ports. The fishing and aquaculture sector's has a below average requirement for higher level qualifications generally. Less than 10% of the sector's labour force were educated to degree level or above in 2016, compared to 32% across the economy.

Fig. 79: Third level degree or above attainment port areas, 2016

Source: *CSO Ireland*

The seafood sector, therefore, provides significant employment opportunities to local people within the port areas, who would otherwise be vulnerable to long-term unemployment and the associated social exclusion which can result. Economic deprivation within peripheral economies can become entrenched where economic opportunity is generally more limited. The 2016 Pobal Deprivation Index provides a relative score which provides a measurement of the affluence/deprivation of a given area relative to the national average.[26] Collectively, the 10 port areas rank below the national average.

SUMMARY

Although unemployment is broadly below average across the port economies, employment rates are low and economic inactivity is relatively high. The working age population within the ports has fallen over the last five years with older demographics becoming increasingly prevalent as a result.

Net out-commuting is common across the port areas, suggesting employment opportunities are limited locally. Within this context both the Agriculture, forestry & fishing and Manufacturing industries are key local employers. Likewise, employment opportunities within these sectors are on average more closely aligned with the skill sets of local people.

On average the port economies are not relatively affluent areas within the national context. In addition, the outlook for the port economies is likely to be challenging given their sectoral structure, demographic trends and skills.

Therefore, a vibrant and growing local seafood sector will be important for the economic and demographic health of these areas.

26 T. Hasse and J. Pratschke, 'The 2016 Pobal HP Deprivation Index for Small Areas (SA)', 2017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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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Melbourne
Hong Kong
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**