# The Economic Impact of the Seafood Sector: An Daingean

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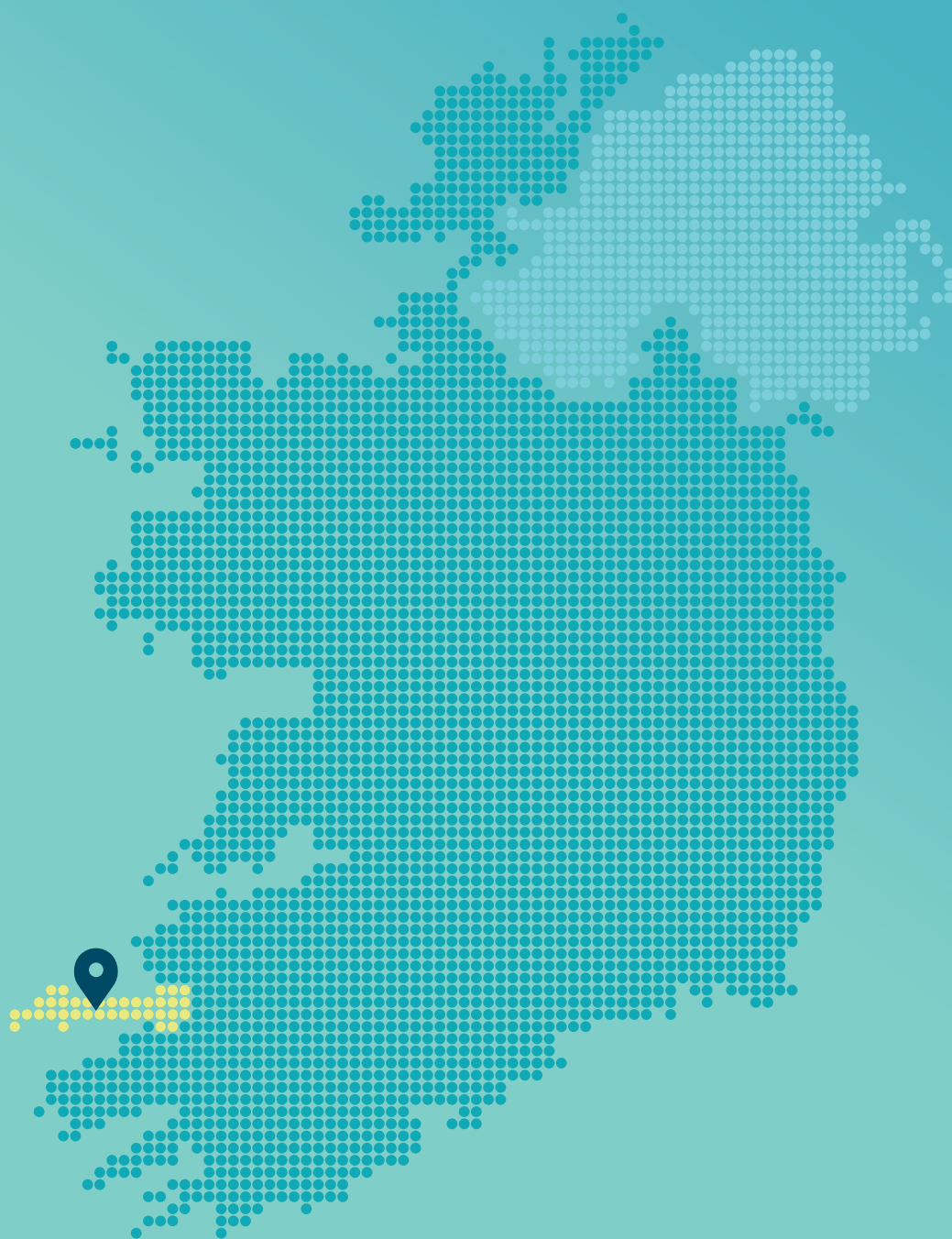
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# Foreword

## The Economic Impact of the Seafood Sector: An Daingean

In 2024, BIM completed its second evaluation of Ireland's top ten ports, providing a five-year comparative analysis of the economic contribution of the seafood sector. This report builds on the 2019 assessment, offering insights into the sector's evolving role at the port, regional, and national levels. It captures key economic trends and structural changes over this period, reflecting the challenges and opportunities faced by the industry. The study examines the direct, indirect, and induced effects of the seafood sector on the An Daingean hinterland, illustrating its continued significance to the local economy.

An Daingean, located on the Dingle Peninsula in Co. Kerry, has a strong fishing heritage, with a well-established commercial fishing and processing sector. Alongside seafood, the local economy is supported by tourism, manufacturing, and agriculture. The region's geography presents logistical challenges, but national road links facilitate connectivity with major urban centres. The seafood sector remains an important pillar of economic activity within this broader landscape.

Findings from this report highlight the significant economic impact of the seafood sector, particularly in terms of Gross Value Added (GVA), employment, and wages. Direct seafood activity at the port generates over €32 million in turnover, supporting 405 direct jobs with the commercial fishing sector remaining the primary driver. Direct GVA at the port is €17 million, while an additional €10.5 million is generated upstream. Alongside the 405 direct jobs, a further 95 jobs are supported in the wider economy. Direct wages total €7.5 million, with an additional €4.2 million generated through indirect effects.

Over the past five years, direct seafood sector GVA in An Daingean has declined by 23%, while employment has grown by 23% and wages by 4%. Across the wider seafood sector, GVA has fallen by over 13%, while employment has increased by 16% and wages by 1%. The overall GVA multiplier effect of the seafood sector has increased from 1.60 to 1.71, indicating higher supply chain spending over this period.

As part of the consultation process for this report, BIM engaged with seafood operators, fish processors, and other industry stakeholders at each port to discuss sectoral trends, challenges, and future prospects. Brexit-related quota reductions had a mixed financial impact, as falling quotas were partially offset by higher market prices. The inshore sector faces growing stock pressures, while rising fuel and operational costs remain key economic concerns across the industry. The processing sector has seen a notable decline in pelagic processing although whitefish processing remains stable, supported by strong demand from tourism and hospitality. The expansion of Offshore Renewable Energy (ORE) projects is seen as a potential challenge to fishing grounds, particularly in Ballinagaul Bay.

This report provides a detailed analysis of these economic trends, offering valuable insights to inform policy discussions and support the continued development of the seafood sector in An Daingean.

# Executive summary

## The seafood sector at the port

The seafood sector makes an important contribution to the An Daingean economy. In 2023, direct seafood-related activity at the port generated €32.4 million in turnover, supporting 405 direct jobs. Commercial fishing is the largest seafood sub-sector at the port, generating €13.7 million in turnover, followed by aquaculture (€10.2 million) and then fish processing (€8.5 million). When translated into GVA, the overall seafood sector made a €16.7 million direct contribution to the local port economy in 2023.[1]

The survey explores the characteristics of firms operating in this sector. In general, firms are typically well-established, having operated for more than 10 years. Seafood businesses at An Daingean typically invested less in capital in 2023 relative to the other ports included within the study. The workforce tended to originate from the local area and three-fifths of sales were exports. In terms of performance, generally turnover fell among the seafood operators and expectations for turnover over the following 12 months broadly mirrored recent performance.

Analysis of the survey results allows the port's seafood sector value within the regional economy to be quantified. Once the indirect and induced effects are calculated, it is estimated that the total economic contribution of the seafood sector at An Daingean equated to €27.5 million of GVA across the South West economy in 2023. The seafood sector at this port also supported an estimated 500 jobs across the region and generated €11.7 million in gross wages. This activity created a fiscal surplus of €6.4 million. When compared to the results of the last study in 2018, An Daingean experienced a real terms decline in GVA an estimated 13.4%. This was accompanied by a growth in employment and gross wages of 16.3% and 1.1%, respectively. This change is largely driven by a survey response from a big fish processor which indicated its turnover was much lower in 2023 than it was in 2018. However, these losses were slightly offset by increased impacts in the indirect channel due to seafood processors facing increasing costs and therefore having a higher supply chain spend.

**€16.7m**
Direct GVA in 2023
The seafood sector makes a significant contribution within the local port economy.

**€27.5m**
Total GVA contribution to the South West in 2023
The seafood sector makes a significant contribution to the wider regional economy.

### Table 1. The estimated benefits of the port seafood sector, South West, 2023

| Ports seafood sector | South-West | | |
|---|---|---|---|
| | GVA (€m) | Employment | Gross wages (€m) |
| Direct | 16.7 | 405 | 7.5 |
| Indirect | 7.4 | 65 | 2.9 |
| Induced | 3.4 | 30 | 1.3 |
| **Total** | **27.5** | **500** | **11.7** |

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

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1    We define the local port economy as the port's District Electoral Division (DEDs)and those surrounding it – see Fig. 1.

## The role of the individual seafood sub-sectors

The analysis of the seafood sector at the port provides the following headline findings throughout the region (which include the combined direct, indirect and induced impacts):[2]

- Activity in the commercial fishing sub-sector has been estimated to sustain 205 jobs, €4.4 million of gross wages and €12.4 million of GVA;

- Activity in the aquaculture sub-sector has been estimated to sustain 140 jobs, €3.6 million of gross wages and €8.5 million of GVA;

- Activity in the fish processing sub-sector has been estimated to sustain 160 jobs, €4.0 million of gross wages and €7.4 million of GVA.

## Socio-economic characteristics

Although the port area's unemployment rate is relatively low, this masks above-average rates of economic inactivity relative to the national average. The data also suggests that there is relatively weak working-age population growth (which could be a symptom of a weak labour market).

The seafood sector plays an important role in the local port economy through its provision of accessible direct jobs, supply chain spending in local businesses and the consumer spending it supports.

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2    Summing the benefits of all three elements within our definition of the seafood sector (commercial fishing, aquaculture and fish processing) would 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 gross wages), all the three sub-sectors were added. However, for the indirect and induced totals, those of the fish processing sub-sector with a proportionate share of the commercial fishing and aquaculture were summed (according to the proportion of sales not destined for local processors and informed by the interview process). The remainder of the fishing and aquaculture indirect and induced impacts will already be accounted for within that of the fish processors.

# 1. Introduction

## 1.1 About the study

The Irish seafood sector is an important component of the Irish economy. It is particularly important to coastal communities 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 port

This report concentrates on the seafood sector of just one of these ports — An Daingean, located on the coast of Co. Kerry in the South West region. In this report we define the local port economy as the District Electoral Divisions (DED) of Dingle and those surrounding it, which constitute its hinterland — informed by BIM and shown in the below figure.

**Fig. 1. Map of the port area within the study**



To inform the analysis, a comprehensive seafood-related survey exercise was carried out across Ireland's main ports. The researchers worked closely with BIM in order to 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.

A total of 448 unique responses were recorded from seafood operators based in the 10 port areas — a response rate of around 50%, relative to the known seafood population. For seafood businesses that did not return a response, the research relied on turnover and employment estimates based on survey responses of seafood businesses of a same size. The study also draws on published data, where available, to better understand the socioeconomic environment of coastal areas within the country. Appendix 1 of this report includes a summary discussion of the pertinent issues facing the local port economy.

## 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;
- **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.

These channels of impact are analysed using three core metrics:

- **Employment**, measured on a Full-Time Equivalent (FTE) headcount basis. This is composed 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 (GVA)** contribution to GDP;
- **Tax receipts** generated by the Irish activity and employment supported by the seafood sector.

### Fig. 2. Economic impact assessment



**Direct Impact** — A company or sector employs lots of staff. Its operations generate GDP and tax for the authorities.

**Indirect Impact** — It also spends money with suppliers who employ staff, generate GDP and pay taxes. They use other suppliers in turn.

**Induced Impact** — Employees (including of the suppliers) spend their wages in the wider economy, generating more GDP, jobs and tax revenues.

**Total Impact** — Added together, these three effects: direct, indirect, induced — comprise the total economic impact of the company or sector.

## 1.3 The key elements of the seafood sector

This paper presents estimates of the size of the local seafood sector and how it impacts the regional economy. The analysis therefore estimates the direct activity associated with the commercial fishing, aquaculture, and fish processing sub-sectors at the port by drawing on the survey findings and information held by BIM. The wider impacts within the local NUTS3 region are then estimated. 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 concerning the methodology.

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

## 1.4 Report structure

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

The report takes the following structure:

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

# 2. The seafood sector at the port

## 2.1 Characteristics of the seafood sector

Commercial fishing forms the largest direct contribution to the seafood sector at An Daingean. In 2023, it accounted for the majority of turnover in this sector (€13.7 million), ahead of aquaculture (€10.2 million) and fish processing (€8.5 million). Commercial fishing also supported the most jobs (170) compared to the fish processing (120) and aquaculture (115) sub-sectors.

Average gross wages also tended to vary by activity. Despite having the largest turnover, commercial fishing and aquaculture are estimated to have supported lower average gross wages (€15,000 and €20,000 per worker) relative to fish processing, which offered an estimated €21,600 per worker.

BIM's registration data and the survey exercise identified five operators in the fish processing sub-sector, compared to 88 for commercial fishing and 27 for aquaculture.

**Table 2. Headline direct economic contribution of the seafood sector, An Daingean, 2023**

|  | Turnover (€m) | Jobs | Gross wages (€m) | Seafood operators |
|---|---|---|---|---|
| Commercial fishing | 13.7 | 170 | 2.5 | 88 |
| Aquaculture | 10.2 | 115 | 2.3 | 27 |
| Fish processing | 8.5 | 120 | 2.7 | 5 |
| **Total** | **32.4** | **405** | **7.5** | **120** |

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

To allow comparison with the previous study, the 2018 figures were inflated to 2023 prices and presented here (see Table 3). Commercial fishing turnover grew by around 47.7% in real terms with similar growth recorded in employment. This was largely due to the number of seafood operators nearly doubling in the area since the last study. Gross wages increased by 9.2% compared to the last study.

The aquaculture sector also experienced strong turnover growth of 41.1% alongside gross wage growth of 52.1%. In contrast, estimates suggest the number of jobs in the sub-sector remained the same. This is most likely due in part to a more complete survey response being achieved in this study, which has facilitated a more accurate estimate of jobs.[3]

For fish processing, turnover and gross wages fell by an estimated 70.1% and 20.9% while employment rose by 20%. This is largely due to the impact of one firm whose survey response in 2023 was significantly down on its 2018 response.

Overall, turnover was down 27.8% while employment and gross wages grew by 22.7% and 4%. The number of operators increased by 42.9%.

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3   There were just two survey responses in the aquaculture sub-sector in An Daingean in 2018, but there were 16 in the 2023 study.

**Table 3. Headline direct economic contribution of the seafood sector (2023 prices), An Daingean, 2018**

|  | Turnover (€m) | Jobs | Gross wages (€m) | Seafood operators |
|---|---|---|---|---|
| Commercial fishing | 9.3 | 110 | 2.3 | 45 |
| Aquaculture | 7.2 | 115 | 1.5 | 35 |
| Fish processing | 28.3 | 100 | 3.4 | 4 |
| **Total** | **44.8** | **330** | **7.2** | **84** |

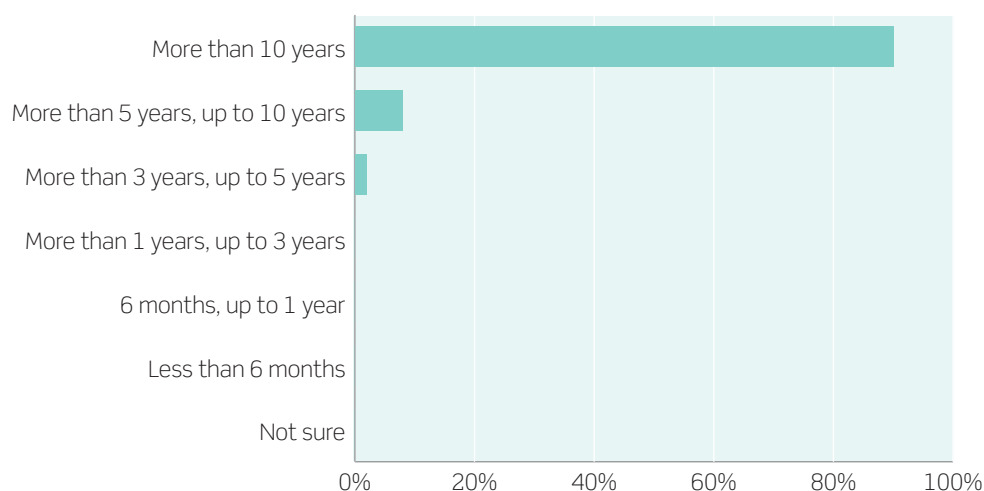*Source: Oxford Economics, Perceptive Insight, BIM*
*Note: May not sum due to rounding*

The survey also provides insight into the profile of businesses operating at the port. Some 58 seafood operators in An Daingean were surveyed, 49% of the population of local seafood businesses. While the sample size for An Daingean is somewhat smaller than for the 10 ports as a whole — the results for which are detailed within the main report — the findings from the port are nevertheless worth exploring.

The survey results show that seafood businesses within the port tended to be relatively mature and well established. A significant majority (90%) of respondents identified as having operated for more than 10 years in the port area, a rate slightly above the aggregate figure for the 10 ports (83%).

**Fig. 3. Seafood sector maturity, An Daingean, 2023**

Share of port respondents



*Source: Oxford Economics, Perceptive Insight*

The survey also explored recent turnover growth among local firms operating in the seafood sector. Overall, turnover growth was relatively poor or elusive over the previous 12 months for the majority of firms in An Daingean. Around 38% of respondents indicated that turnover had neither increased nor decreased over this period, above the aggregate rate for all 10 ports (34%). The share of respondents who had seen turnover decrease (47%) was significantly larger than those who had seen it increase (16%).

While the sample size of respondents in the separate seafood components was not sufficient to provide an accurate breakdown of turnover performance by all sub-sectors, the survey indicates that over half of the respondents who engaged in commercial fishing (60%) experienced a decrease in turnover, compared to just 13% in aquaculture. The latter also appears to have been relatively more stable — half of respondents indicated that turnover stayed the same, compared to under half of commercial fishing operators (35%).

In the previous study, the survey indicated that more than one third of the respondents engaged in commercial fishing (35%) saw turnover decrease, compared to just 6% in aquaculture. The latter also appears to have been relatively more stable — three in four respondents indicated that turnover stayed the same, compared to under half of commercial fishing operators (47%).

**Fig. 4. Changes to turnover in the past 12 months, An Daingean, 2023**
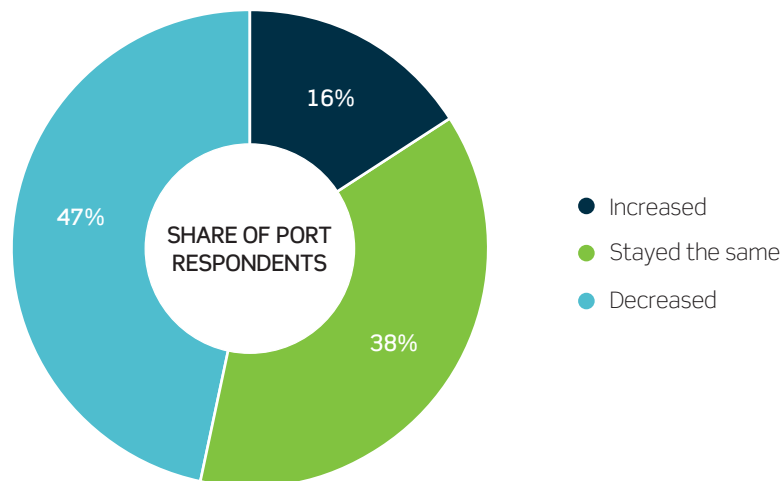


*Source: Oxford Economics, Perceptive Insight*

The outlook for firms over the following 12 months broadly mirrored recent performances, with 45% of respondents expecting turnover to decrease over the next 12 months. There was a slight increase in the share expecting a rise in turnover over the following year (21%) when compared to performance over the preceding year (16%).

In the previous study, the proportion of respondents expecting turnover to stay the same in 2019 was similar to that which noted no change over the previous 12 month period in 2018 (61%). However, a lower share expected a fall in turnover over the next year (11%) when compared to performance over the preceding year (19%).

**Fig. 5. Anticipated changes to seafood turnover, An Daingean, 2023**
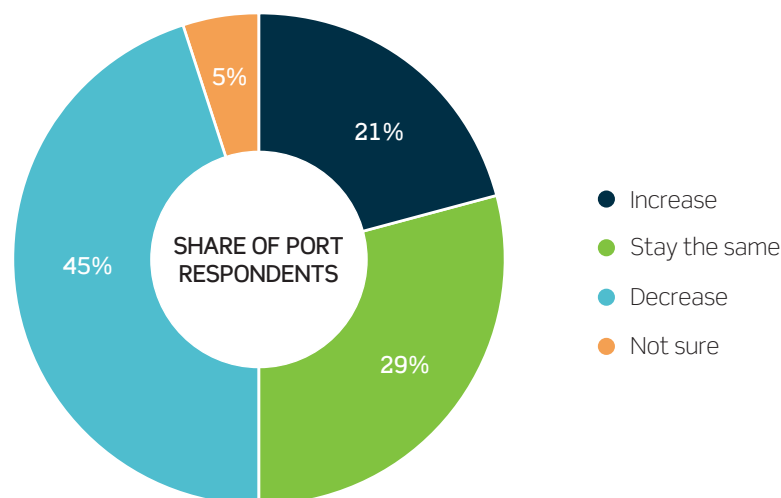


*Source: Oxford Economics, Perceptive Insight*

Improving turnover is often linked to investment: improving the quantity and/or quality of capital available to the workforce can enable improved productivity and turnover. On the one hand, the willingness of firms to engage in capital investment may in itself signal a positive outlook for the future; on the other, it may reflect the deterioration of existing capital stocks. The survey results hint at the predominance of the latter factor — while only 21% of respondents expected turnover to increase over the next year, half (50%) spent money on capital investment in the last financial year.

According to the survey, seafood businesses based at An Daingean spent an average of €82,800 on capital investment in 2023. This equates to the seventh highest investment level across the 10 ports included in the study. In 2023, the average fish processing business at the port invested over €150,000 in capital. By contrast, the average aquaculture and commercial fishing business in An Daingean invested just €87,800 and €76,300 respectively.

### Fig. 6. Average capital investment, An Daingean, 2023

**Average annual capital investment expenditure (€)**
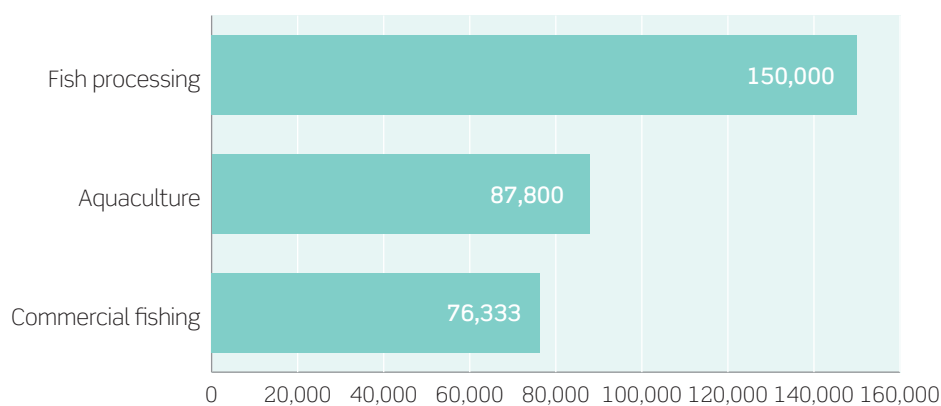


*Source: Oxford Economics, Perceptive Insight*

Alongside demonstrating the importance of the seafood sector in providing local job opportunities, the survey also sought to further understand the characteristics of this workforce — including where the seafood sector's employees originate. The results show that a majority (71%) of workers in the seafood sector originate from the port hinterland, highlighting the value of the seafood sector at An Daingean to the local population. A further 15% of workers came from elsewhere in Co. Kerry. Just over a tenth (13%) were foreign nationals, mostly originating from outside the EU (7%).

The previous study showed that a majority (55%) of workers in the seafood sector originated from the port hinterland. A further 6% of workers came from elsewhere in Co. Kerry. Just over a third (38%) were foreign nationals, mostly originating from the EU (33%).

Fish processing activities at the port were more likely to employ workers from abroad. Nearly half (49%) of the workforce originated from outside of Ireland, all from the EU. The remaining 51% of the workforce were from the port hinterland, a share significantly lower than for either aquaculture (71%) or commercial fishing (77%).

As the majority of the workforce came from the port hinterland, or the rest of the county, the workforce tended to also live locally. Almost the entire workforce (98%) resided within the county, with 86% living in the port hinterland itself.

## Fig. 7. Origins of the workforce, An Daingean, 2023



**EMPLOYEE SHARE BY ORIGIN**

- Port hinterland — 71%
- Wider county — 15%
- Rest of ROI — 1%
- EU — 6%
- Outside EU — 7%
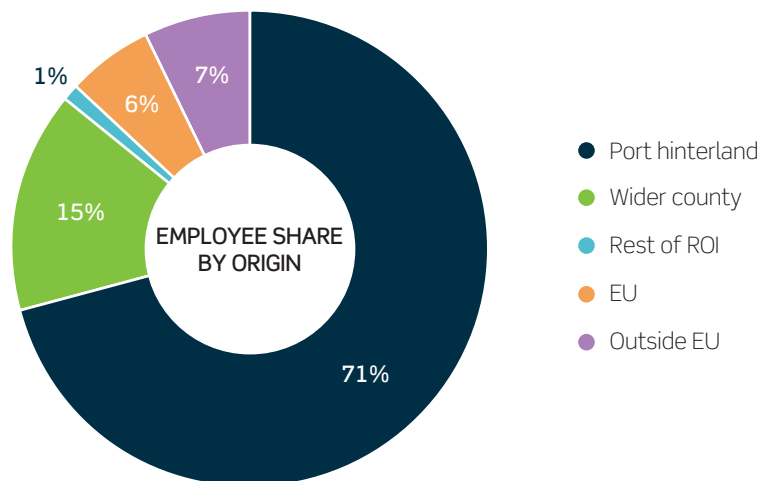
*Source: Oxford Economics, Perceptive Insight*

The survey also explored the destinations of sales made by seafood sector firms. Exports accounted for 61% of the total in An Daingean, a share only slightly higher than the 10 ports' combined share (56%). Although the sample size is relatively low, a significant majority of exports were to the EU.

By contrast, only 12% of sales were made in the port hinterland — the fourth lowest of the 10 ports — and 9 percentage points below the ports' average (21%). The remaining 27% of sales were made elsewhere in Ireland, the fifth highest rate across all ports.

## Fig. 8. Seafood sales by destination, An Daingean, 2023



**SHARE OF SALES BY DESTINATION**

- Port hinterland — 12%
- Rest of ROI — 27%
- Export markets — 61%
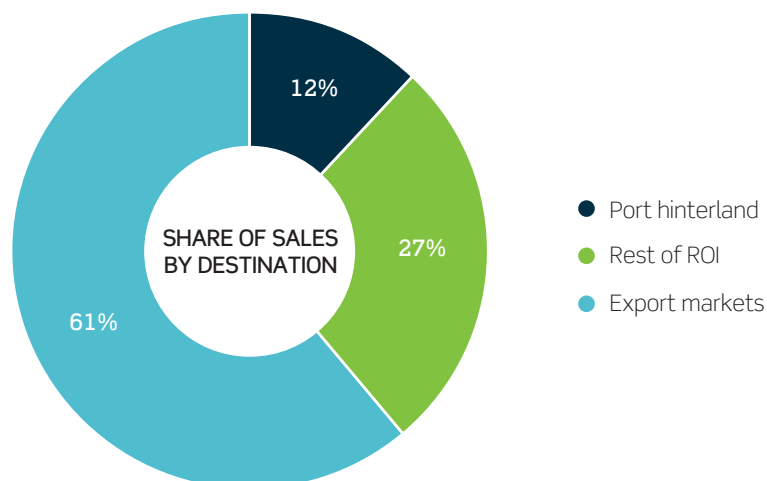
*Source: Oxford Economics, Perceptive Insight*

## 2.2 Conclusion

The sector directly employed an estimated 405 people and almost the entire workforce (98%) resided within the county, with 86% living in the port hinterland itself.

Like most other ports in the survey, around half of respondents reported that turnover had decreased over the previous 12 months. However, 16% reported experiencing an increase. In addition, capital investments over the previous year were among the lowest of those recorded across the 10 ports studied.

# 3. The impact of seafood's sub-sectors

This section looks at the wider economic contribution An Daingean's seafood sector has on the regional economy.

## 3.1 Commercial fishing

Commercial fishing at An Daingean generated an estimated €12.4 million of GVA across the South West economy in 2023. More than a third of this GVA total (€4.7 million) resulted from supply chain activities (€3.4 million) and consumer spending in the regional economy (€1.3 million).

Commercial fishing activity is estimated to have supported 205 jobs throughout the regional economy. A large proportion of these jobs (170) were associated with direct fishing activity within the port area. This direct activity supported €2.5 million in earnings across the South West and rises to €4.4 million after the employment sustained through the rounds of supply chain spending and the consumer spending impacts are included. The indirect and induced effects tend to occur in relatively higher value-added sectors, generating more GVA per worker on average — and higher average gross wages — than direct activities at the port. The employment multiplier for the direct commercial fishing activity that takes place at An Daingean is 1.22 which was slightly lower than the employment multiplier from the previous study of 1.23.

**Table 4. Benefits of the commercial fishing sub-sector, South West, 2023**

| Port commercial fishing | South-West | | |
|---|---|---|---|
| | GVA (€m) | Employment | Gross wages (€m) |
| Direct | 7.7 | 170 | 2.5 |
| Indirect | 3.4 | 25 | 1.4 |
| Induced | 1.3 | 10 | 0.5 |
| **Total** | **12.4** | **205** | **4.4** |

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

Unsurprisingly, the agriculture, forestry and fishing sector accounted for almost two thirds (€7.9 million) of the total GVA contributions in the region given it contains commercial fishing (see Table 5).[4] It also was the main beneficiary in employment terms, supporting 175 jobs in 2023, or 84% of the regional total, alongside €2.6 million in gross wages.

Outside of agriculture, forestry and fishing, wholesale and retail trade received the largest GVA contribution (€1.5 million), being among the stronger beneficiaries of consumer spending throughout the South West economy, while manufacturing (€1.1 million) received the next largest contribution, as a result of its more prominent role within commercial fishing's supply chain.

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4    Commercial fishing and aquaculture activity are classified within the 'Agriculture, forestry & fishing' sector. Whereas, fish processing falls within the 'Manufacturing' sector.

### Table 5. Total benefits of commercial fishing by sector, South West, 2023

| Port commercial fishing | South-West | | |
|---|---|---|---|
| | GVA (€m) | Employment | Gross wages (€m) |
| Agriculture, forestry and fishing | 7.9 | 175 | 2.6 |
| Mining and quarrying | 0.0 | 0 | 0.0 |
| Manufacturing | 1.1 | <5 | 0.3 |
| Electricity, gas, steam and air conditioning supply | 0.1 | 0 | 0.0 |
| Construction | 0.0 | 0 | 0.0 |
| Wholesale and retail trade; repair of motor vehicles | 1.5 | 15 | 0.8 |
| Transportation and storage | 0.2 | 5 | 0.1 |
| Accommodation and food service activities | 0.1 | <5 | 0.1 |
| Information and communication | 0.1 | 0 | 0.0 |
| Financial and insurance activities | 0.2 | <5 | 0.1 |
| Real estate activities | 0.5 | 0 | 0.0 |
| Other business services | 0.3 | <5 | 0.1 |
| Public administration and defence | 0.0 | 0 | 0.0 |
| Education | 0.1 | <5 | 0.0 |
| Human health and social work activities | 0.2 | 5 | 0.2 |
| Arts, entertainment and recreation & other services | 0.0 | <5 | 0.0 |
| **Total** | **12.4** | **205** | **4.4** |

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

## 3.2 Aquaculture

In total, the port's aquaculture sub-sector supported 140 jobs, €3.6 million in gross wages and an €8.5 million contribution to GDP throughout the South West in 2023. Approximately 115 of these jobs were associated with direct aquaculture-related activity taking place within the port area itself, while an additional 25 jobs resulted from the supply chain and consumer spending-related impacts. Aquaculture's employment multiplier was estimated to be the same as that of the commercial fishing sub-sector (1.2), with 10 direct jobs supporting 2 jobs elsewhere within the South West region. The employment multiplier for the direct aquaculture activity that takes place at An Daingean was 1.23, slightly higher than the 2018 employment multiplier of 1.17.

### Table 6. Benefits of the aquaculture sub-sector, South West, 2023

| Port aquaculture | South-West | | |
|---|---|---|---|
| | GVA (€m) | Employment | Gross wages (€m) |
| Direct | 5.2 | 115 | 2.3 |
| Indirect | 2.3 | 15 | 0.9 |
| Induced | 1.1 | 10 | 0.4 |
| **Total** | **8.5** | **140** | **3.6** |

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

Employment supported by aquaculture activities at the port was almost entirely concentrated within the agriculture, forestry and fishing sector. Agriculture, forestry and fishing (115 jobs) alone accounted for 84% of the overall employment benefit, with the next largest beneficiary being wholesale and retail trade (10 jobs). Agriculture, forestry and fishing however only accounted for roughly two-thirds of the gross wage benefits (€2.3 million) and a similar share of GVA (€5.3 million).

**Table 7. Total benefits of aquaculture by sector, South West, 2023**

| Port aquaculture | South-West | | |
|---|---|---|---|
| | GVA (€m) | Employment | Gross wages (€m) |
| Agriculture, forestry and fishing | 5.3 | 115 | 2.3 |
| Mining and quarrying | 0.0 | 0 | 0.0 |
| Manufacturing | 0.9 | <5 | 0.3 |
| Electricity, gas, steam and air conditioning supply | 0.1 | 0 | 0.0 |
| Construction | 0.0 | 0 | 0.0 |
| Wholesale and retail trade; repair of motor vehicles | 0.7 | 10 | 0.3 |
| Transportation and storage | 0.2 | <5 | 0.1 |
| Accommodation and food service activities | 0.1 | <5 | 0.0 |
| Information and communication | 0.1 | 0 | 0.0 |
| Financial and insurance activities | 0.2 | <5 | 0.1 |
| Real estate activities | 0.3 | 0 | 0.0 |
| Other business services | 0.3 | <5 | 0.1 |
| Public administration and defence | 0.0 | 0 | 0.0 |
| Education | 0.0 | <5 | 0.0 |
| Human health and social work activities | 0.2 | 5 | 0.2 |
| Arts, entertainment and recreation & other services | 0.0 | <5 | 0.0 |
| **Total** | **8.5** | **140** | **3.6** |

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

## 3.3 Fish processing

The fish processing sub-sector at An Daingean supported 160 jobs, €7.4 million of GVA and €4.0 million in gross wages throughout the South West in 2023. In addition to 120 direct jobs, 25 were supported throughout the supply chain, while a further 10 resulted from spending supported by those employed either directly or indirectly. The fish processing employment multiplier was the strongest of the three seafood sub-sectors at 1.31 — with every 10 direct fish processing jobs supporting three jobs throughout the rest of the regional economy. In the previous study, the employment multiplier for the fish processing sub-sector was 1.69.

**Table 8. Benefits of the fish processing sub-sector, South West, 2023**

| Fish processing | South-West | | |
|---|---|---|---|
| | GVA (€m) | Employment | Gross wages (€m) |
| Direct | 3.8 | 120 | 2.7 |
| Indirect | 2.3 | 25 | 0.9 |
| Induced | 1.2 | 10 | 0.5 |
| **Total** | **7.4** | **160** | **4.0** |

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

The South West's manufacturing sector benefitted most from fish processing activity at An Daingean. In 2023, it supported €4.4 million of GVA, equivalent to just under two-thirds of the sub-sector's total in the South West, and 120 jobs. The proportionate share of gross wages (€2.8 million) was just under three quarters of the fish processing total. The wholesale and retail sector was the next largest suggest this should be beneficiary of An Daingean's fish processing sub-sector, generating €800,000 of GVA within the regional economy. This is followed by the agriculture, forestry and fishing sector which created €600,000 of GVA within the regional economy.

**Table 9. Total benefits of fish processing by sector, South West, 2023**

| Ports processing | South-West | | |
| --- | --- | --- | --- |
| | GVA (€m) | Employment | Gross wages (€m) |
| Agriculture, forestry and fishing | 0.6 | 15 | 0.2 |
| Mining and quarrying | 0.0 | 0 | 0.0 |
| Manufacturing | 4.4 | 120 | 2.8 |
| Electricity, gas, steam and air conditioning supply | 0.1 | 0 | 0.0 |
| Construction | 0.0 | 0 | 0.0 |
| Wholesale and retail trade; repair of motor vehicles | 0.8 | 10 | 0.4 |
| Transportation and storage | 0.2 | 5 | 0.1 |
| Accommodation and food service activities | 0.1 | <5 | 0.0 |
| Information and communication | 0.1 | 0 | 0.0 |
| Financial and insurance activities | 0.2 | <5 | 0.1 |
| Real estate activities | 0.5 | 0 | 0.0 |
| Other business services | 0.2 | <5 | 0.1 |
| Public administration and defence | 0.0 | 0 | 0.0 |
| Education | 0.0 | <5 | 0.0 |
| Human health and social work activities | 0.2 | 5 | 0.2 |
| Arts, entertainment and recreation & other services | 0.0 | <5 | 0.0 |
| **Total** | **7.4** | **160** | **4.0** |

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

## 3.4 Conclusion

All three of the port seafood sub-sectors represented significant value to the regional economy. In employment terms, they individually supported at least 140 jobs in the South West after accounting for their direct, indirect and induced impacts. Commercial fishing was the largest of the three in GVA terms. Its direct value added was more than that of aquaculture and fish processing, and it supported an estimated €12.4 million of GVA throughout the wider region.

# 4. Total impact of the overall port seafood sector

## 4.1 Seafood sector activity at the port

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

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

To avoid this double counting, the following approach has been taken to calculate total impacts for GVA, employment, gross wages, and tax:

### Direct impacts:

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

### Indirect and induced impacts:

- For GVA, employment, gross wages, and taxes, the total indirect and induced impacts are calculated by summing the indirect and induced impacts of fish processing and a 100% and 83% share of the indirect and induced impacts from the respective aquaculture and commercial fishing sub-sectors. This is because information from the survey interviewees suggests that exports and domestic sales outside the port area's own processors accounted for 100% and 83% of the respective aquaculture and fishing production. The remainder of the commercial fishing/aquaculture sub-sectors' indirect and induced impacts will already have been accounted for in the indirect and induced impacts from the fish processing sub-sector.

## 4.2 Regional estimates

It is estimated that the seafood sector at An Daingean contributed €27.5 million of GVA to the South West economy in 2023. The seafood sector supported 500 jobs across the region, generating €11.7 million in gross wages for those employed.

## Fig. 9. Benefits of the seafood sector, South West, 2023
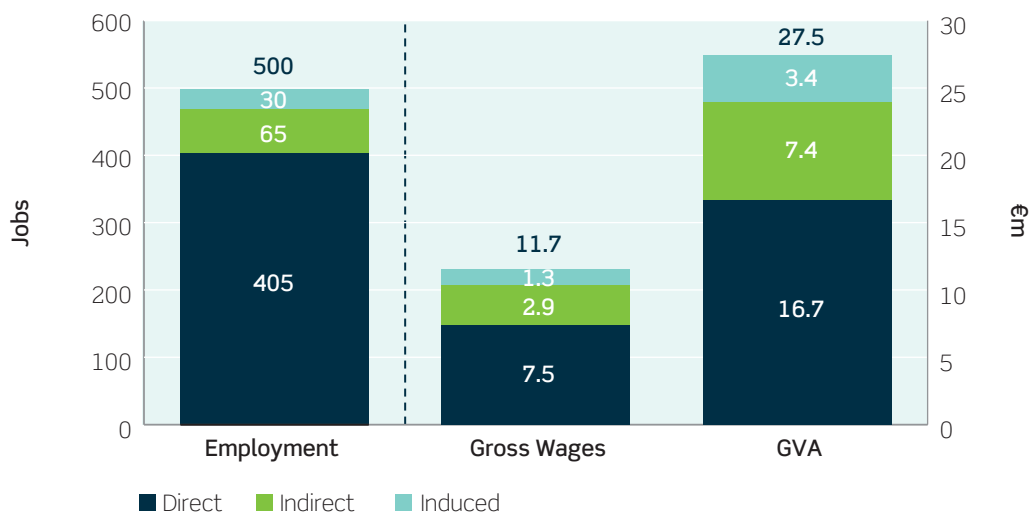


**Source:** *Oxford Economics, Perceptive Insight, CSO*

More than a third of the GVA total (€10.8 million) was generated either in indirect activities supporting the local seafood sector (€7.4 million) or through additional induced spending that resulted from the employment supported by the sector and its supply chain (€3.4 million). As a whole, the port's seafood sector is estimated to have a GVA multiplier of 1.65 meaning that for every €1 million in GVA contributions to GDP, a further €650,000 was generated within the regional economy. In the previous study, the GVA multiplier for the port's seafood sector was 1.50.

## Table 10. Total seafood sector benefits, South West, 2023

| Ports seafood sector | South-West | | |
|---|---|---|---|
| | GVA (€m) | Employment | Gross wages (€m) |
| Direct | 16.7 | 405 | 7.5 |
| Indirect | 7.4 | 65 | 2.9 |
| Induced | 3.4 | 30 | 1.3 |
| **Total** | **27.5** | **500** | **11.7** |

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

In GVA terms, the agriculture, forestry and fishing sector benefitted most from An Daingean's seafood sector. It supported €13.7 million of GVA across the South West in 2023, equivalent to 50% of local seafood's total contribution across the region. The sector also accounted for the majority of the employment benefits (305 jobs) and had the largest earnings impact (€5.1 million).

By contrast, manufacturing accounted for a lower share of GVA (22%) relative to the agriculture, forestry and fishing sector and supported less employment due to it being a more productive sector. The sector created 125 jobs in this sector equating to 25% of the total in the South West — less than half the number of jobs supported in agriculture, forestry and fishing. Manufacturing also represented a significant share of earnings generated by the seafood sector (€3.4 million).

Wholesale and retail was the next largest beneficiary in GVA terms (€2.8 million), supporting an estimated 30 jobs, followed by real estate (€1.3 million) and other business services (€900,000).

**Table 11. Total benefits by sector, South West, 2023**

| Local seafood sector | South-West | | |
|---|---|---|---|
| | GVA (€m) | Employment | Gross wages (€m) |
| Agriculture, forestry and fishing | 13.7 | 305 | 5.1 |
| Mining and quarrying | 0.0 | 0 | 0.0 |
| Manufacturing | 6.2 | 125 | 3.4 |
| Electricity, gas, steam and air conditioning supply | 0.2 | <5 | 0.0 |
| Construction | 0.0 | 0 | 0.0 |
| Wholesale and retail trade; repair of motor vehicles | 2.8 | 30 | 1.3 |
| Transportation and storage | 0.6 | 10 | 0.3 |
| Accommodation and food service activities | 0.2 | 5 | 0.1 |
| Information and communication | 0.2 | 0 | 0.1 |
| Financial and insurance activities | 0.6 | 5 | 0.3 |
| Real estate activities | 1.3 | <5 | 0.0 |
| Other business services | 0.9 | 5 | 0.3 |
| Public administration and defence | 0.0 | 0 | 0.0 |
| Education | 0.1 | 5 | 0.1 |
| Human health and social work activities | 0.6 | 10 | 0.5 |
| Arts, entertainment and recreation & other services | 0.1 | 5 | 0.1 |
| **Total** | **27.5** | **500** | **11.7** |

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

## 4.3 Taxation estimates

Seafood activity at the port provides further benefits through the generation of tax revenues to the Revenue Commissioners. These fiscal impacts can again be split into their direct, indirect, and induced components depending on the channel of activity that gives rise to them. It is estimated that the port seafood sector had a direct net fiscal surplus of €2.7 million in 2023, consisting of the labour-based tax paid by the sector's employees (income tax, PRSI etc.), corporation tax receipts and sectoral taxation on production less subsidies.

The indirect fiscal benefits represent the same taxation components as above but are generated within the sector's wider supply chain, in addition to net taxes on input purchases. Combined these represented a tax revenue of €1.2 million, As those employed in the sector and within its supply chain spend their wages, this supports further jobs and activity within the Irish economy. It is estimated that this induced activity supported a further €2.5 million in tax revenue.

Therefore, in total (i.e. direct, indirect and induced), An Daingean's seafood sector is estimated to have had a fiscal surplus of €6.4 million in 2023. This total was made up of €4.6 million in employment/labour-related tax, €1.0 million in corporation tax, €1.2 million in taxation associated with the spending of wages, and a net tax deficit of €300,000 through taxation on inputs and production.[5]

In comparison, the An Daingean seafood sector generated an estimated €4.7 million in taxes in 2018. This was made up of €3.7 million in employment/labour-related tax, €0.8 million in corporation tax, €1.4 million in taxation associated with the spending of wages, and a net tax deficit of €1.1 million through taxation on inputs and production.[6]

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5    Net tax position refers to taxes less subsidies.
6    Tax figures related to the 2018 study are in 2023 prices.

**Table 12. Fiscal impact by taxation type, Ireland, 2023**

| Ports seafood sector | Total tax estimates (€m) | | | | |
|---|---|---|---|---|---|
| | Labour tax | Corporation tax | Production tax | Input purchases tax | Tax on consumption |
| Agriculture, forestry and fishing | 1.5 | 0.4 | -0.7 | 0.1 | 0.0 |
| Mining and quarrying | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Manufacturing | 1.4 | 0.2 | 0.0 | 0.1 | 1.0 |
| Electricity, gas, steam and air conditioning supply | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| Construction | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Wholesale and retail trade; repair of motor vehicles | 0.5 | 0.1 | 0.0 | 0.0 | 0.0 |
| Transportation and storage | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 |
| Accommodation and food service activities | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 |
| Information and communication | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| Financial and insurance activities | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 |
| Real estate activities | 0.2 | 0.1 | 0.1 | 0.0 | 0.0 |
| Other business services | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 |
| Public administration and defence | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Education | 0.1 | 0.0 | 0.0 | 0.0 | -0.1 |
| Human health and social work activities | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 |
| Arts, entertainment and recreation & other services | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **Total** | **4.6** | **0.8** | **-0.5** | **0.2** | **1.2** |

*Source: Oxford Economics, Perceptive Insight, CSO*

## 4.4 Growth since 2018

Over the period 2018 to 2023, in real terms, An Daingean had mixed results across all channels in GVA, employment, and gross wages. In the direct channel, GVA fell by 22.9% while employment and gross wages grew by 22.7% and 3.8%, respectively. In the indirect channel, GVA increased by 11.6% while employment remained unchanged and gross wages grew by 6.0%. In the induced channel, GVA fell by 5.1%, employment by 25%, and gross wages by 24.4%.

**Overall, An Daingean experienced a real terms decline in GVA of an estimated 13.4%. This was accompanied by a growth in employment and gross wages of 16.3% and 1.1%, respectively. This change in GVA was largely driven by a survey response from a big fish processor which indicated its turnover was much lower in 2023 than it was in 2018. The losses were slightly offset by increased impacts in the indirect channel due to seafood processors facing increasing costs and therefore having a higher supply chain spend.**

## 4.5 Conclusion

The analysis shows that the seafood sector at An Daingean supported 500 jobs, €11.7 million in gross wages and €27.5 million in GVA. Furthermore, this activity is estimated to have created a fiscal surplus of €6.4 million.

# 5. Conclusions

## 5.1 The seafood sector at the port

The seafood sector makes an important contribution to the An Daingean economy. In 2023, the seafood sector at the port generated €32.4 million in turnover, supported 405 direct jobs and created €7.5 million in gross wages. Commercial fishing is the largest seafood sub-sector at the port, generating €13.7 million in turnover, followed by aquaculture (€10.2 million) and fish processing (€8.5 million). When translated into GVA, the overall seafood sector made a €16.7 million direct contribution to the local port area economy.

The survey explores the characteristics of firms operating in this sector. In general, firms were typically well-established, having operated for more than 10 years. Seafood businesses at An Daingean typically invested less in capital relative to the other ports included within the study. The workforce tended to originate from the local area and three-fifths of sales are exports. In terms of performance, generally turnover fell the seafood operators and expectations for turnover over the following 12 months broadly mirrored recent performance.

## 5.2 The Commercial Fishing sub-sector is the main contributor

The commercial fishing sub-sector made the strongest contribution to the South West economy. In 2023, it generated €12.4 million of GVA, of which €4.7 million was linked to indirect (€3.4 million) and induced (€1.3 million) effects. The commercial fishing sub-sector is estimated to have provided benefits of the following size:

- 170 direct jobs and €2.5 million of gross wages, producing €7.7 million of GVA;
- 25 indirect jobs and €1.4 million of gross wages, producing €3.4 million of GVA;
- 10 induced jobs and €500,000 of gross wages, producing €1.3 million of GVA.



| Fishing | GVA | | Employment | | Wages | |
|---|---|---|---|---|---|---|
| | Direct | +36 since 2018 | Direct | +55% since 2018 | Direct | +9% since 2018 |
| | Total | +45% since 2018 | Total | +49% since 2018 | Total | +26% since 2018 |

## 5.3 Other components remain significant

Although the fish processing sub-sector generated less direct GVA than the commercial fishing sector, its GVA multiplier was higher in comparison, thereby boosting its total GVA impacts. Accordingly, the analysis shows the economic impact of the fish processing element was of the following size in 2023:

- 120 direct jobs and €2.7 million of gross wages, producing €3.8 million of GVA;
- 25 indirect jobs and €900,000 of gross wages, producing €2.3 million of GVA;
- 10 induced jobs and €500,000 of gross wages, producing €1.2 million of GVA.

## Fish Processing

**GVA**
**Direct**  -67% since 2018
**Total**  -58% since 2018

**Employment**
**Direct**  +20% since 2018
**Total**  -5% since 2018

**Wages**
**Direct**  -21% since 2018
**Total**  -35% since 2018

Furthermore, the analysis shows that the economic impact of the port's aquaculture sector equated to the following benefits across the South West economy:

- 115 direct jobs and €2.3 million of gross wages, producing €5.2 million of GVA;

- 15 indirect jobs and €900,000 of gross wages, producing €2.3 million of GVA;

- 10 induced jobs and €400,000 of gross wages, producing €1.1 million of GVA.

## Aquaculture

**GVA**
**Direct**  +20% since 2018
**Total**  +30% since 2018

**Employment**
**Direct**  0% since 2018
**Total**  +2% since 2018

**Wages**
**Direct**  +53% since 2018
**Total**  +52% since 2018

**Therefore, the port's collective seafood sector supported an estimated 500 jobs, €11.7 million in gross wages and €27.5 million in GVA within the regional economy in 2023. This activity created a net fiscal surplus of €6.4 million. In comparison, once the results from the last study are converted to 2023 prices, there was a decrease in GVA of 13.4%, while employment and gross wages increased by 16.3% and 1.1%, respectively. This change is largely driven by a survey response from a big fish processor which indicated its turnover was much lower in 2023 than it was in 2018. However, the losses were slightly offset by increased impacts in the indirect channel due to seafood processors facing increasing costs and therefore having a higher supply chain spend.**

## Overall Seafood Sector

**GVA**
**Direct**  -23% since 2018
**Total**  -13% since 2018

**Employment**
**Direct**  +23% since 2018
**Total**  +16% since 2018

**Wages**
**Direct**  +4% since 2018
**Total**  +1% since 2018

## 5.4 Seafood sector supporting peripheral economies

Although the port area's unemployment rate is relatively low, this masks above-average rates of economic inactivity relative to the national average. The data also suggests that there is relatively weak working-age population growth (which could be a symptom of a weak labour market).

The seafood sector plays an important role in the local port economy through its provision of accessible direct jobs, supply chain spending in local businesses and the consumer spending it supports.

# Appendix 1: An Daingean's economic challenges

## Demographics

The port area and hinterland's population grew by 10.5% in the six years between 2016 and 2022, a rate above that of both the regional (6.6%) and national averages (8.1%). At the same time, the number of residents aged 15 to 64 grew by 6.3%, compared to 7.8% at national level. As a result, the working-age component of the population was relatively low, at 61.4% in 2022, below both the regional and national averages.

### Table 13. Population indicators, 2016

| | Growth (2016-2022) | | 2022 | |
|---|---|---|---|---|
| | Population | Working age | Population | Working age share |
| An Daingean | 10.5% | 6.3% | 21,000 | 61.4% |
| South-West | 6.6% | 5.2% | 728,100 | 64.4% |
| Ireland | 8.1% | 7.8% | 5,149,100 | 65.3% |

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

An analysis of the port area's population by age cohorts relative to the national picture shows that the distribution was skewed at both the younger and older ends. Those aged 65 and over accounted for 20% of all residents — five percentage points above the national average in 2022. Likewise, younger working age people (aged 25-44) were under represented, representing a share of the local population which was more than four percentage points below the national average in 2022.

### Fig. 10. Age group comparisons, Port area vs Ireland, 2022
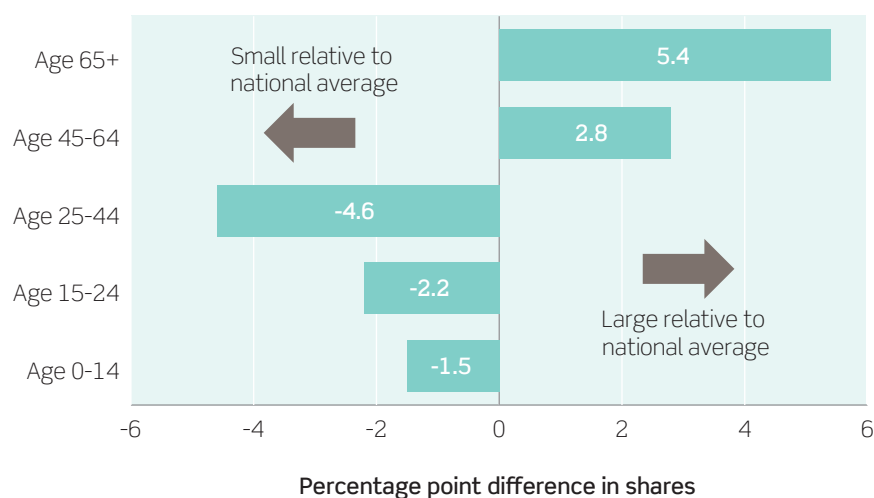


*Source:* *CSO Ireland*

Although qualification attainment within the port area tended to be stronger than the broader county, it was weaker than that of the national average. Those educated to degree level or above accounted for 32% of the population aged 15 and above in An Daingean — below the national average of 34%. Those with no formal qualifications or, at most, primary level education, represented 10% of residents aged 15 and over in 2022. Although this share was slightly lower than the Co. Kerry average (11%), it was on a par with the national average (10%).

**Fig. 11. Degree level or above attainment, 2022**



Share of residents over the age of 15
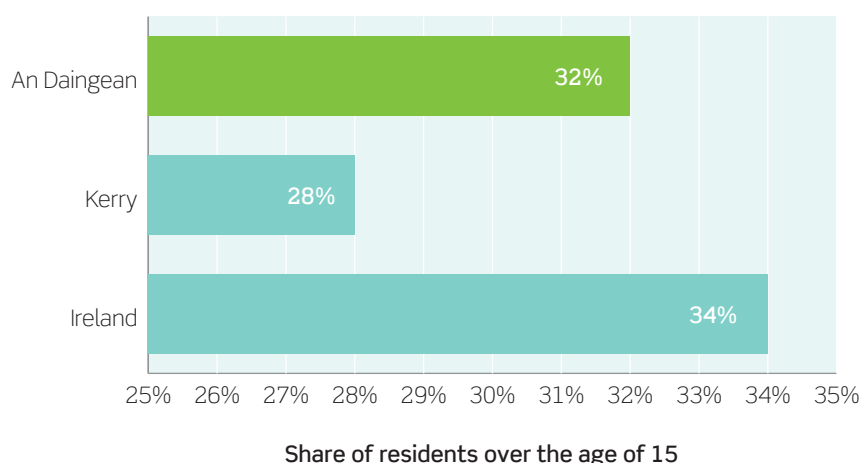
*Source:* CSO Ireland

## Economic activity and structure

The latest available data indicated that An Daingean's labour market was performing relatively strongly. The local unemployment rate within the port area and its hinterland was relatively low at 7.9% in 2022.[7] The unemployment rate throughout the South-West region and Ireland overall was 7.3% and 8.3%, respectively, in the same year.

The local employment rate of 53.7% was slightly weaker than both the regional and national averages (see Table 14). Furthermore, Census data reveals that the economic inactivity rate[8] among those residents aged 15 and over stood at 41.6% in 2022. Local inactivity was therefore higher than the South-West (40.1%), and higher than the national (38.8%) average.

**Table 14. Headline economic indicator comparisons, 2022**

|  | Unemployment rate | Employment rate | Economic inactivity |
|---|---|---|---|
| An Daingean | 7.9% | 53.7% | 41.6% |
| South-West | 7.3% | 55.5% | 40.1% |
| **Ireland** | **8.3%** | **56.1%** | **38.8%** |

*Source:* CSO

7    Defined as a share of the labour force aged 15 years and over.
8    Economic inactivity represents the share of the population aged 15 and over who were neither employed nor looking for employment.

## Summary

Although the port area's unemployment rate was relatively low, this masks above-average rates of economic inactivity relative to the national average. Furthermore, there was relatively weak working-age population growth.

The seafood sector plays an important role in the local port economy through its provision of accessible direct jobs, supply chain spending in local businesses and the consumers spending it supports.

In comparison to the previous study, the unemployment rate fell from 10.7% in 2016 to 7.9% in 2022 while the employment rate also declined from 53.8% in 2016 to 53.7% in 2022. The working-age share fell from 63.8% in 2016 to 61.4% in 2022. The age group comparisons with the national average were largely the same as what they were in 2016 with each grouping still being smaller or larger than the national average as they were in the previous study. An Daingean improved its educational attainment as those with degree level qualifications or above made up 27% in 2016 and 32% in 2022.
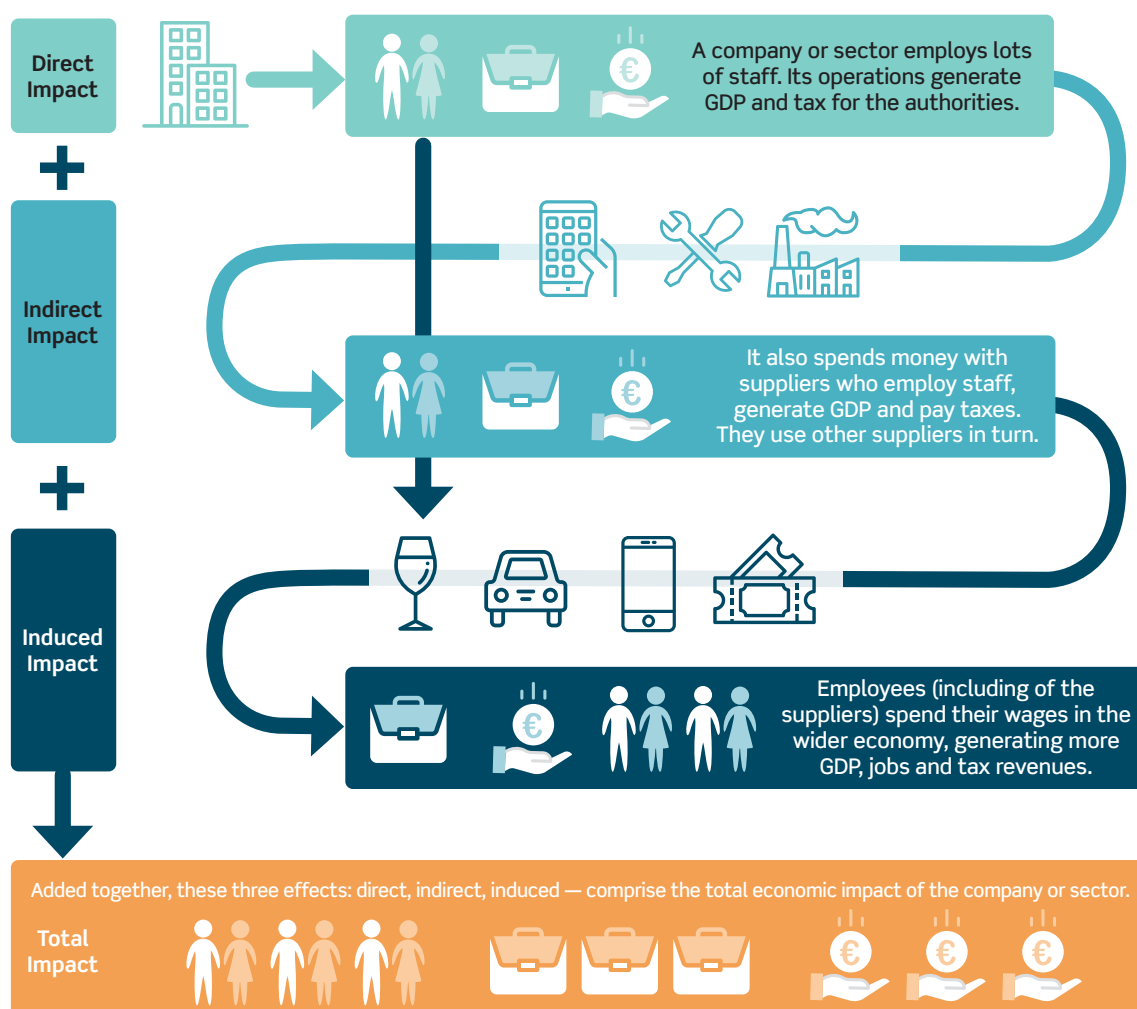
# Appendix 2: Model approach

## Understanding economic impact assessments

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

**Fig. 12. Overview of economic impact methodology**



**Direct Impact**

A company or sector employs lots of staff. Its operations generate GDP and tax for the authorities.

**+**

**Indirect Impact**

It also spends money with suppliers who employ staff, generate GDP and pay taxes. They use other suppliers in turn.

**+**

**Induced Impact**

Employees (including of the suppliers) spend their wages in the wider economy, generating more GDP, jobs and tax revenues.

Added together, these three effects: direct, indirect, induced — comprise the total economic impact of the company or sector.

**Total Impact**

*Source:* *Oxford Economics*

This report uses three main metrics to quantify each of the channels by which the seafood sector could contribute to the regional[9] and national economy:

- **Gross value-added (GVA)** contribution to Gross Domestic Product (GDP):[10] This measures the value of goods and services produced in an area, industry, or sector of an economy and is equal to output minus intermediate consumption;

- **Employment**: Employment is presented in terms of full-time equivalent (FTE) jobs as defined in the report, through the combination of workplace employment by full time and part time status;

- **Gross wages** is the total value of salary, bonus, and benefits 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 which was 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. 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 published sources for comparator geographies are used as a proxy estimates where 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 2023.

### 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.[11]

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, researchers were able to apply the average ratio of jobs to turnover level in that sector and apply average sectoral gross wages, etc. In other words, researchers 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 and fishing' and 'manufacture of food products').

This turnover figure is essentially the value of output within the local seafood sector and encompasses intermediary demand, gross wages, and profits. Using the sectoral ratios of output to GVA in the Irish input-output tables, the direct sectoral GVA contributions to GDP in the local economy were estimated. 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 this estimate of direct output and gross wages, sectoral taxation assumptions were applied and the resulting fiscal benefits that would likely be collected by the Revenue Commissioners were calculated.

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9   Ideally, the impacts of the seafood sector on the port area would be quantified, but there was not enough published sectoral employment, GDP and gross wage data. Sufficient data was only available at regional level to produce sub-national impacts.
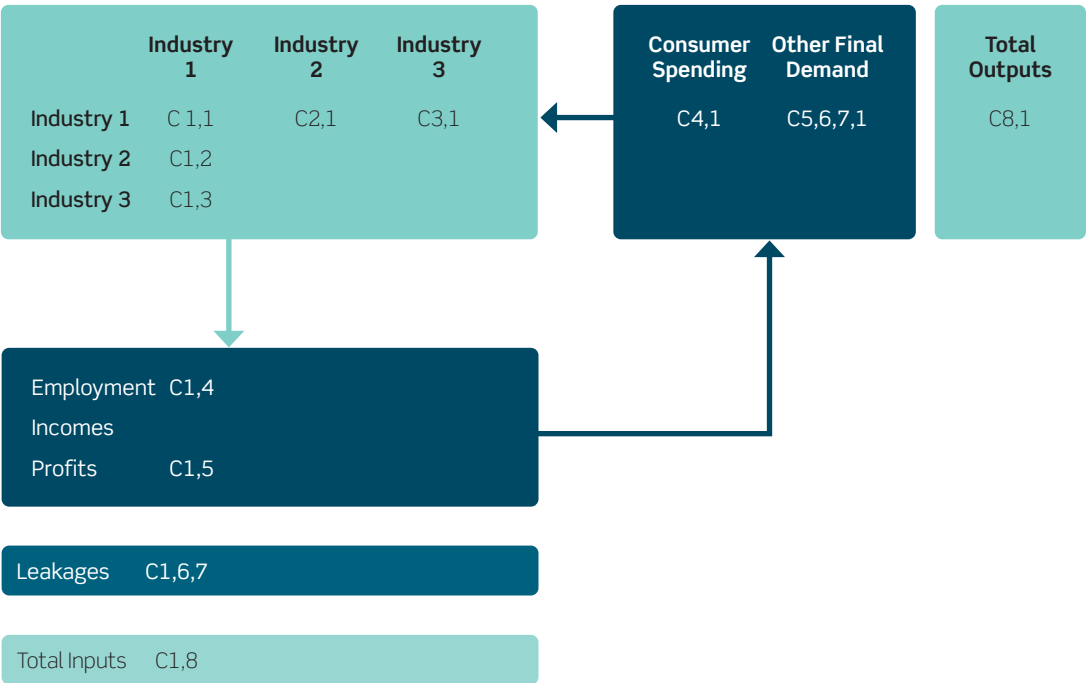
10  GDP is the main summary indicator of economic activity in Ireland. GDP can be defined as GVA plus taxes on products less subsidies on products. References to economic growth (or when the economy enters recession) typically relate to the rate of change of GDP. All references in this report relate to GVA; also known as GDP at 'basic prices'; and they exclude taxes and subsidies.

11  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

An input-output model was used to estimate the indirect and induced impacts. Fig. 12 presents a stylised version (showing just three sectors for presentation purposes) of the 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. 12. Stylised input-output model**

| | Industry 1 | Industry 2 | Industry 3 | | Consumer Spending | Other Final Demand | | Total Outputs |
|---|---|---|---|---|---|---|---|---|
| Industry 1 | C 1,1 | C2,1 | C3,1 | | C4,1 | C5,6,7,1 | | C8,1 |
| Industry 2 | C1,2 | | | | | | | |
| Industry 3 | C1,3 | | | | | | | |

| Employment | C1,4 |
|---|---|
| Incomes | |
| Profits | C1,5 |

| Leakages | C1,6,7 |
|---|---|

| Total Inputs | C1,8 |
|---|---|

*Source:* Oxford Economics

The latest Irish input-output tables were used for the analysis, but were adjusted 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.[12] 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, information gathered from the survey was used to further isolate the procurement spend locally, thereby strengthening the overall modelling assumptions.



## MODELLING SUPPLY CHAIN IMPACTS

The survey yielded 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). This information was used to construct a more detailed picture of the first round of supply chain spending than the published input-output tables would otherwise provide.

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

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

**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, the input-output model was used to estimate the induced impacts.

## Overcoming double-counting

Throughout the analysis, the impact estimates are presented for the core elements of the seafood sector — commercial fishing, aquaculture, and fish processing. However, when estimating the total impact of the overall ports seafood sector, simply summing the respective benefits of all three sub-sectors would 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.

To avoid this, the following approach has been taken to calculate total impacts for GVA, employment, gross wages, and tax:

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

### Indirect impacts:
- For GVA, employment, and gross 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 gross 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/aquaculture sub-sectors' induced impacts will already be accounted for within the induced impacts from the fish processing sub-sector.

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