CamNesa
CONSULTING

UNDERSTANDING THE WELSH SEAFOOD SUPPLY CHAIN - EXECUTIVE SUMMARY

This report has been funded by Sea Fish Industry Authority in partnership with Milford Haven Port Authority to evaluate the seafood supply chain in Wales to inform decision making with regard to future support for the sector in Wales.

Contents

1. Management Summary

As a key sector identified within the Welsh Government's Food and Drink Action Plan, the fisheries sector in Wales has been a long standing contributor to both the maritime and rural economy.

Distinct from other food sectors, the fisheries sector in Wales is made up of a high performing shellfish aquaculture sector and a catching sector characterized by its make up of predominantly under 10m vessels targeting a variety of shellfish species.

As a holistic supply chain study, CamNesa has sought to assess available secondary research and undertake primary research with key industry stakeholders by interview with owner managers of businesses operating in the onshore supply chain and a sample of fishers across Wales within the catching sector.

Throughout the exercise we have been careful to ensure anonymity of respondents to the survey and have designed the primary research to ensure that information with regard to commercial activities is kept at industry level.

The findings of the study have led to a strong response from the onshore handling and processing sector having provided responses indicating positivity in this part of the sector looking to the future with business growth and expanding markets.

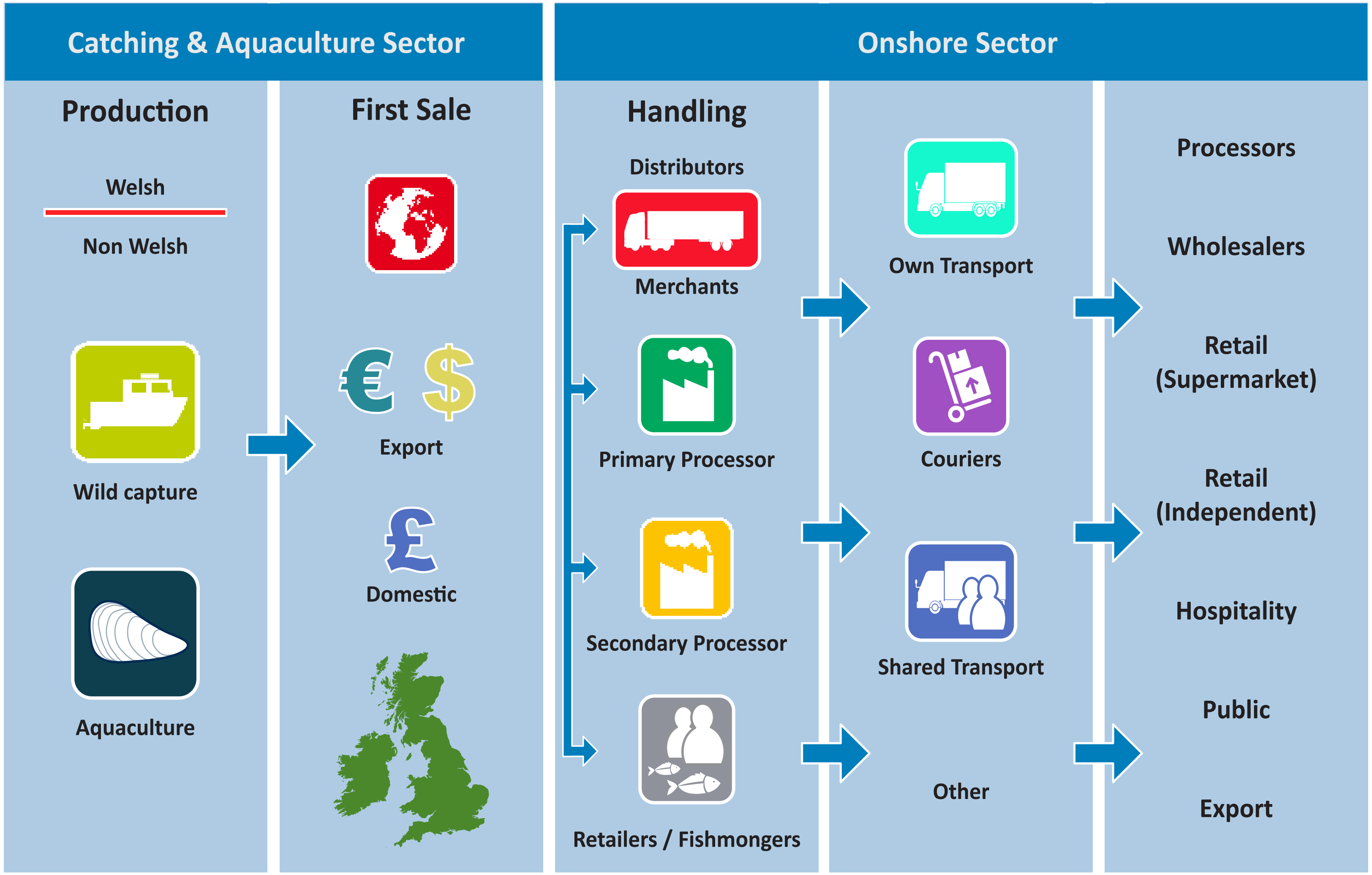
The handling and processing sector is dominated by micro and small businesses, with just under 60% being well established and trading for 10 years or more. We have identified that the sector imports product for processing as well as sourcing raw material within Wales. We have also identified large non-SME's importing fisheries products and adding value as well as wholesaling.

Whilst we have established the number of operators in the onshore sector at 64, we are aware of others operating involved in the handling of fisheries products who either could not or did not wish to be involved in the study.

We have reported our recommendations at the end of the report for industry to consider how they wish the sector be supported by relevant agencies. Supply chain co-operation and development is critical to establishing a market position for Welsh fisheries products, but this is set against a production sector feeling under pressure from an increasing regulatory burden and pressured by conflicting interests throughout the marine sector.

Linkages and organisation within the production, processing and handling sectors will be vital to position Welsh products distinctively within the market place and we hope that this study will provide the baseline foundations to build upon this. The schematic below provides a picture of our study findings in terms of interactions within the sector.

Figure 1



2. Key Highlights of the Seafood Supply Chain from Study Findings

Catching and Gathering Sector

- Shellfish dominates the landings in the sector in Wales with Lobster, Crab, Whelk and Scallop being the main species landed.

- Respondents within the key stakeholder group added that Bass and Prawn were key species landed in Wales, highlighting the seasonality of fisheries throughout Wales.

- Volumes (by weight for all species and all vessels) vary considerably over the most recent four year period from 26k tonnes in 2012 to 13.6k tonnes in 2014 (n.b. 2014 are provisional figures). The five main shellfish species; i.e. Whelks, Mussels, Queen Scallops, Scallops, Crabs (C.P.Mixed Sexes) account for around 95 per cent of all shellfish landed in Wales.

- The respondents from the onshore survey also confirmed that the five man shellfish species listed above constituted their main activities.

- Landings are made at 48 ports around the coast of Wales, however, five ports; i.e. Milford Haven, Holyhead, Saundersfoot, Fishguard and Swansea, account for between 60 and 80 per cent of all landings during the period 2011-2014.

- The gathering sector landed an average of 1,756 tonnes per annum in Wales from the Dee, Bury inlet and Three Rivers areas during the period 2011 - 2014.

Aquaculture Sector

- The key stakeholder group were fairly unanimous in citing Mussels as the main farmed species in Wales. In addition, they referred to projects focusing on farming oysters and sea bass.

- In 2012, there were some 9k tonnes of shellfish farmed in Wales with an additional 0.5k tonnes of finfish

- It is without doubt that the shellfish aquaculture sector in Wales is an exemplar of volume production of mussel.

The Seafood Processing and Distribution Sector

With regard to the on-shore sector, our original, consolidated list stood at 101 businesses. Following our census survey we estimate there are 64 active businesses in the on-shore supply chain in Wales

Our survey obtained responses from 55 of these 64 businesses and below we can summarise their size, location and activity:

Size:	83.5 per cent 10 or fewer employees
Turnover band:	67 per cent less than or equal to £0.5m pa
Location:	47 per cent South West Wales, 36 per cent North Wales, 13 per cent Mid and South East Wales
Activity:	20 per cent primary processing, 5 per cent secondary processing, 11 per cent mixed processing, 20 per cent merchant or agent, 24 per cent retailing

3. Introduction

The purpose of the study has been to provide a holistic review of the fisheries, aquaculture and onshore seafood processing and handling supply chain in Wales to gain a better understanding of the position of the sector. It is hoped that the results of this report will inform future strategy with regard to supporting mechanisms by Government, Sea Fish and other Authorities.

3.1 Scope

The scope of the study brought together the catching, gathering and aquaculture sector, the onshore processing sector in Wales and the onward supply chain. The key outcomes for the project were identified as being:

- A greater understanding of fish and shellfish landings in Wales (including information on species, volumes, where landed and seasonality).

- Identification of the end markets (domestic and international) and distribution routes for fish and shellfish landed in Wales. To provide timings/frequency of distribution where possible.

- Information on the total number of businesses involved in the seafood supply chain in Wales, broken down by size, location and activity. To provide trade data (e.g. volumes, turnover) where possible.

- Practical recommendations on how to ensure effective, on-going collection of relevant data for monitoring sector growth.

3.2 Aims

- To confirm the numbers of businesses operating within the Welsh supply chain

- To establish the level of added value activity taking place in Wales

- Identify market channels and destinations of Welsh seafood products

- Via interview with respondents, identify perceived strengths and weaknesses within the supply chain

- Identify the extent to which exports play as a market channel

- To identify the level of activity geographically and spatially map data accordingly

3.3 Approach

The project approach was to consolidate and where required to triangulate data from a number of available sources.

The core methodology for the study was a direct interview process with owner managers of the onshore processing and handling businesses within the sector in Wales.

These interviews were conducted following a detailed research exercise to establish the number of operators in the onshore sector in Wales, not only from Government held data, but via industry held information and local authorities.

Within the catching, gathering and aquaculture sector we have used data captured from the main Government bodies involved in receiving data from the sector most notably MMO, CEFAS and Seafish.

The overall approach to the study has been to use both qualitative and quantitative primary research in combination with secondary research into existing data sources, particularly with reference to the catching, gathering and aquaculture sub-sectors.

This report is structured to emulate the flow of the supply chain, starting with the production and primary product sources of the catching, gathering and aquaculture sector prior to moving to the onshore handling and processing sector and distribution to final market outlets for consumer purchase.

3.4 Addressing Data Caveats

Unlike other food sectors, the fishing sector, particularly in the case of Wales, is diverse in its sources of data. Flows of product throughout the supply chain including landings from foreign registered vessels as well as the indigenous fleet results in delay in the return of information for interpretation.

In comparison to other parts of the UK, in Wales, we do not have traditional auction sales of product at ports where prices achieved for landed catch are available in effectively real time.

To gain a greater understanding of the supply chain, a number of key stakeholder interviews were undertaken at the beginning of the study. These findings supported the methodologies put forward to Sea Fish at the inception stage of the study. The responses from the stakeholders are summarized in the following section of the document.

To address anomalies in catching data, a benchmarking exercise has been undertaken with fishers throughout Wales to assess vessel performance within the fleet, species variation, destination of product and volumes.

To address concerns with regard to confidentiality, data has needed to be anonymised and guarantees of confidentiality provided to respondents of the study. Due to the fact the sector is small in Wales, those operating within it are easily identified, and care has been taken within this document to ensure that the commercial data of individual businesses is not highlighted.

To address concerns with regard to confidentiality, data collated has been at industry level and not individual business level. It has been more focused on the supply chain and not on the performance or capacities of individual businesses.

Out of 64 companies identified in the onshore processing and handling sector,55 gave full interviews to CamNesa researchers. Not all were content in responding to interview for a number of reasons, particularly time constraints and worries with regard confidentiality.

3.5 Mapping the Supply Chain

Mapping the sector is a difficult task with many variables influencing the sporadic nature of the industry

The process of fishing within the catching sector is a form of food production that is difficult to assess due to external factors including weather, tidal conditions, Government interventions with regard to specific fisheries and the nature of movement and cycles of seasonal shell fisheries within Welsh waters.

The industry is complex in terms of regulation, enforcement and the breadth of species landed and farmed within Wales. The dominance of shellfish and small vessels under 10m characterizes the sector alongside well established mussel aquaculture production.

Volumes can differ greatly between years and geographical areas of coastline in Wales. Quality of shellfish can also be an issue depending on source affecting the ability of the supply chain to pass this product onto the end consumer.

Unlike other sectors where very large processors exist and dominate the supply chain in lamb, beef and dairy for example, the onshore processing and supply chain within Wales is made up of micro businesses processing at a relatively small scale processing in comparison.

The sector is very sensitive with regard to the provision of data and where processing takes place we would not expect businesses to provide information that may affect their trading position. With this in mind, the mapping of the supply chain has taken a general format.

Whilst this is the case, we have presented two process flows of the Welsh seafood supply chain of both the catching and aquaculture sector and the onshore handling and processing sector at appendix 1 of the document with explanatory notes.

4. In Depth Interviews with Key Industry Stakeholders

To commence the primary research, we undertook a series of in-depth interviews with key individuals with interests within the Welsh fisheries sector. This was to both identify and verify the key sources of information for the sector and gain a general understanding of issues within the supply chain.

As a precursor to the detailed interviews undertaken with the onshore handling and processing sector, structured interviews were conducted with key stakeholders across the sector to establish views with regard the current trends and attitudes within the sector.

Questions were orientated around the supply of raw material into the sector, market trends, the destination of product and perceived strength and weaknesses in the supply chain.

Identification of major fish and shellfish species landed in Wales

- Whilst respondents agreed that Whelk, Lobster, Crab, Prawn and Bass were the major species landed in Wales, they added a range of other species (including fin fish) caught around Wales at different times

- Some respondents cited seasonality as a factor (e.g. lobster and spider crab in the summer and prawns and scallop in the winter) as an influence on which species are caught and others referred to changes from year to year (driven by climate change, etc).

Have there been changes regarding species landed over recent years?

- Respondents cited a range of forces affecting changes in species landed including environmental factors and legislation.

- They report changes in the supply chain (especially the merchants element) and the number of active fishermen (a function of the economic viability of fishing) engaged in the sector at any one time

What are the major fish and shellfish species farmed in Wales?

- The respondents were fairly unanimous in citing Mussels as the main farmed species in Wales. In addition, respondents referred to projects focusing on farming oysters and sea bass (now defunct).

- Respondents had no strong view regarding this question and pointed to the fact that aquaculture was a relatively small part of the Welsh seafood sector. However, some respondents pointed to future opportunities in this sector

Can you define the fisheries supply chain in Wales?

- Excluding the foreign vessels, the majority of respondents see the supply chain for Welsh fishermen as dominated by two or three main Merchants

- This is a function of the physical location of the Welsh fishing industry (i.e. on the periphery of both the UK and obviously Europe) and the desire of Welsh fishermen to focus on fishing and not on the commercial aspects of their business.

What are the main end user segments for Welsh fish/shellfish?

- The majority of respondents cited European markets (especially the hospitality sector) as the main end user segments

- One respondent made the point that catches from Wales are really valued in Europe but our fishermen don’t see the return (because of the supply chain).

- Respondents went on to estimate that the majority of the Welsh catch (around 75-80%) is exported.

Who are the main merchants in Wales?

- Respondents were able to cite specific businesses, such as Castle Bay Sea Foods, The Lobster Pot, Syren Seafoods, Aquamar, A&M Fleetwood, WM Shellfish (Holyhead), Mermaid Seafoods (Llandudno), Quay Fresh (New Quay), Falfish (Redruth, Cornwall), Coombes Seafood (Cornwall), and Quay Shellfish.

Who are the main processors in Wales?

- The overriding view was that currently there was very little processing capacity available in Wales

- One respondent pointed out this was a function of the lack of consumer demand for shellfish in Wales

- In addition, it was stated that the infrastructure for processing in Wales had increased and this would lead to further processing in the short term

Who are the main secondary processors in Wales?

- Various respondents were able to cite (the same) small number of secondary processors however, the general opinion was that there was very little secondary processing in Wales.

What are the main strengths of the seafood supply chain in Wales?

- Whilst respondents saw the quality of the product as being a strength, there did seem to be a degree of pessimism about the current state of the sector.

What are the main weaknesses of the seafood supply chain in Wales?

- A range of themes was offered, summed up by this quotation:

  '.. [an] increasing burden of legislation, illegal fishing (that isn't controlled), bad publicity and virtual hostility from government.'

- In addition, respondents cited insufficient local processing capacity and a lack of an effective market mechanism to provide fishermen with a living wage upon which they could build a future for the industry in Wales.

The initial interviews with key industry stakeholders provided us with an understanding of their perceptions and knowledge of the supply chain and the known sources of data in relation to the industry.

The following sections provides a detailed breakdown of industry information relating to this sector in Wales and following that, the responses from those interviewed in the onshore product handling and processing sector.

5. The Catching, Gathering and Aquaculture Sector in Wales

This first section of the report will provide general statistics in relation to the three main primary production sectors for seafood products in Wales, hand gathering, catching and aquaculture. Information has been collated from secondary research, some of which has been provided on a provisional basis due to factors influencing the flow of information within the supply chain.

The general industry statistics will be followed by a review of the most recent figures available on landings in Wales. These figures are provided to show a breakdown of UK registered vessel landings and also landings by foreign vessels into Welsh ports. These figures are then broken down into weight and value for the key species sub categories of demersal and shellfish. Pelagic species are not included in the breakdown as the volume and value landed into Wales was insignificant.

We have ranked the top sub species categories of shellfish and demersal that form the main value and volume species into Welsh ports.

This is followed by an overview of the aquaculture sector in Wales including its performance in comparison to other countries within the UK and also information on the hand gathering sub sector.

General Catching, Aquaculture and Gathering Sector Statistics

These sectors are the source of the raw material in terms of seafood landed from wild capture fisheries and the aquaculture production sector we have in Wales.

Table1: A breakdown of the sector at UK level is as follows[1]

Description	**England**	**Scotland**	**NI**	**Wales**	**UK**
Marine fishing	1,345	1,600	165	**165**	3,275
Freshwater fishing	95	50	0	**10**	155
Marine aquaculture	135	190	20	**15**	360
Freshwater aquaculture	120	50	5	**5**	180
Agents involved in the sale of food, beverages and tobacco	1,325	90	30	**70**	1,515
Wholesale of other food, including fish, crustaceans and molluscs	1,340	260	80	**60**	1,740
Retail sale of fish, crustaceans and molluscs in specialised stores	945	240	25	**35**	1,245
	5,305	2,480	325	**360**	8,470

[1] Source: Office of National Statistics

To further review the make up of the fishing and aquaculture sector the table below indicates employee numbers within VAT / PAYE enterprises by country

Table 2: Number of VAT and/or PAYE Enterprises in UK by country and employment size band, 2013[2]

SIC (2007) Division 03 - Fishing and aquaculture

Number

	0-4	5-9	10-19	20-49	50-99	100-249	250+	Total
England	1,555	80	30	10	0	0	0	1,675
Wales	**180**	**10**	**5**	**0**	**0**	**0**	**0**	**195**
Scotland	1,570	145	45	5	5	0	5	1,775
NI	170	15	0	0	0	0	0	185
UK	3,475	250	80	15	5	0	5	3,830

[2] Source: op cit

Further analysing the breakdown of Standard Industrial Classification (SIC) codes, we can see that the sector is dominated by England and Scotland, with Wales being comparable to Northern Ireland:

Table 3: Number of VAT and/or PAYE Enterprises in UK by country and SIC sub division (*1), 2014[3]

	Marine fishing	Freshwater fishing	Marine aquaculture	Freshwater aquaculture	Total
England	1,340	105	120	115	1,680
Wales	**160**	**15**	**15**	**10**	**200**
Scotland	1,600	50	110	30	1,790
NI	160	0	15	5	180
UK	3,260	170	260	160	3,850

*1 Notes to Table 3:

SIC(07): 0311 : Marine fishing
SIC(07): 0312 : Freshwater fishing
SIC(07): 0321 : Marine aquaculture
SIC(07): 0322 : Freshwater aquaculture

[3] Source: op cit

General Fleet Information

Table 4: Welsh fishing fleet, by number of vessels and size[4]

Vessels	**2011**	**2012**	**2013**	**2014**
10m and under	425	440	442	426
Over 10m	40	39	35	40
All	465	479	477	466
Gross tonnage	5083	5399	4888	5539

Size of the Welsh fishing fleet by length of vessel, 2013[5]

	8m & under	8.01 -10m	10.01-15m	15.01-18m	18.01-24m	over 24m	All
No. vessels	324	118	25	3	1	6	477
Gross tonnage	447	785	462	150	97	2947	4888

4 https://www.gov.uk/government/statistical-data-sets/uk-sea-fisheries-annual-statistics-report-2014
5 https://www.gov.uk/government/statistical-data-sets/uk-sea-fisheries-annual-statistics-report-2013

Trends of those employed in the fishing sector and pay values

Table 6: Trends in Numbers of fishermen in Wales[6]

	Number					
	2009	**2010**	**2011**	**2012**	**2013**	**2014**
Regular	417	563	693	673	472	547
Part Time	434	553	298	347	259	303
All	851	1116	991	1020	731	850

In this section we have reviewed the key information with regard to the fabric of the catching and gathering sector industry in Wales in terms of its economic make up, labour force characteristics and infrastructure employed in terms of the vessels utilised.

The indigenous sector has a sporadic level of engagement as while there are some 477 vessels registered, only 250 have been identified as being active via submission of landing returns. The level of employment in the sector as highlighted in table 6 is also an issue with wide variance in those engaged in the fishing industry between years.

As highlighted in the key stakeholder feedback, these statistics somewhat underline the variability of supply by the sector which has knock on effects on the ability of the catching sector in Wales to provide continuity of supply to the handling and processing sector.

[6] https://www.gov.uk/government/statistical-data-sets/uk-sea-fisheries-annual-statistics-report-2014

5.1 Catching Sector Statistics

Catching Sector Overview

The catching sector segment of the supply chain in Wales is made up pre-dominantly of vessels under 10 metres in length. Operators working within what is termed as wild capture fisheries where a number of different methods are used to fish for both shellfish and fin fish species.

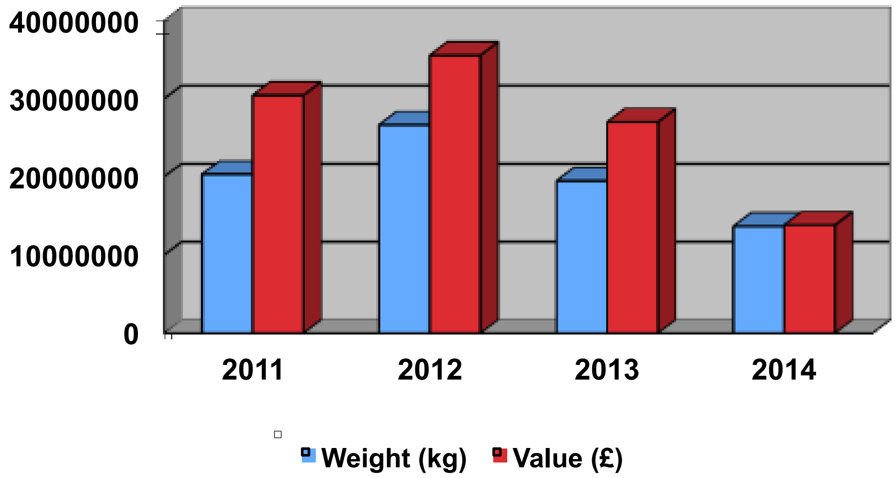
The most common method of fishing for shellfish species such as crab and lobster in Wales is through the use of low impact, static fishing gear such as pots and static tangle nets for species such as spider crab. The indigenous Welsh fleet is often referred to as the inshore fleet by its very nature of fishing the waters close to Wales's coastline.

Alongside the Welsh fleet, Welsh ports provide landings facilities for other vessels from within the UK and foreign registered vessels. Within the landings section of this document, the impact of landings of these vessels and the diversity of species landed into Welsh ports will be outlined. From non-Welsh vessels, shellfish landings with the exception of scallop are minimal, with the majority of landings of value being Monks, Anglers and Sole.

Table 7: Landings (*1) into all Welsh ports by weight & value, 2011 – 2014[7]

Weight (kg) & Value (£)

	2011	2012	2013	2014
Weight (kg)	20,300,544	26,647,232	19,444,541	13,650,832
Value (£)	30,443,775	35,532,879	27,021,997	13,799,417



[7] Source: Marine Management Organisation (MMO), 2015

Table 8: Landings (*1) into all Welsh ports by weight, 2011 – 2014

Weight (kg)

	2011	2012	2013	2014
UK vessels	16,328,125	21,500,283	14,741,948	10,276,784
Foreign vessels	3,972,419	5,146,949	4,702,593	3,374,048
All	20,300,544	26,647,232	19,444,541	13,650,832

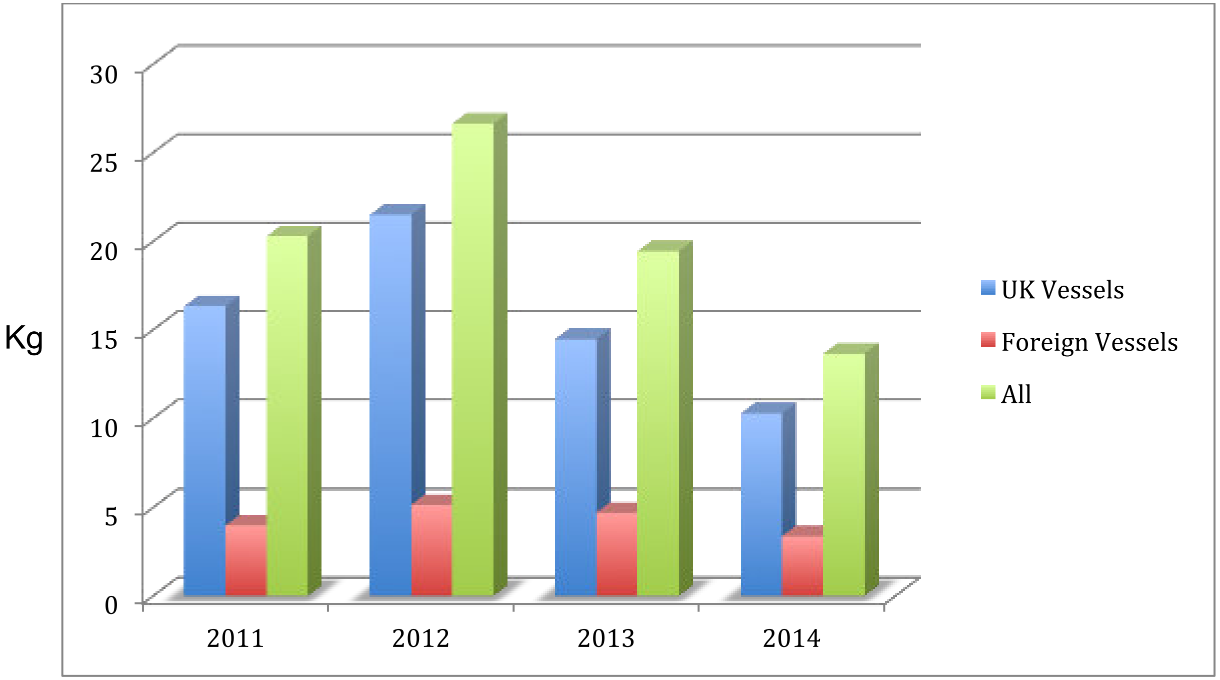
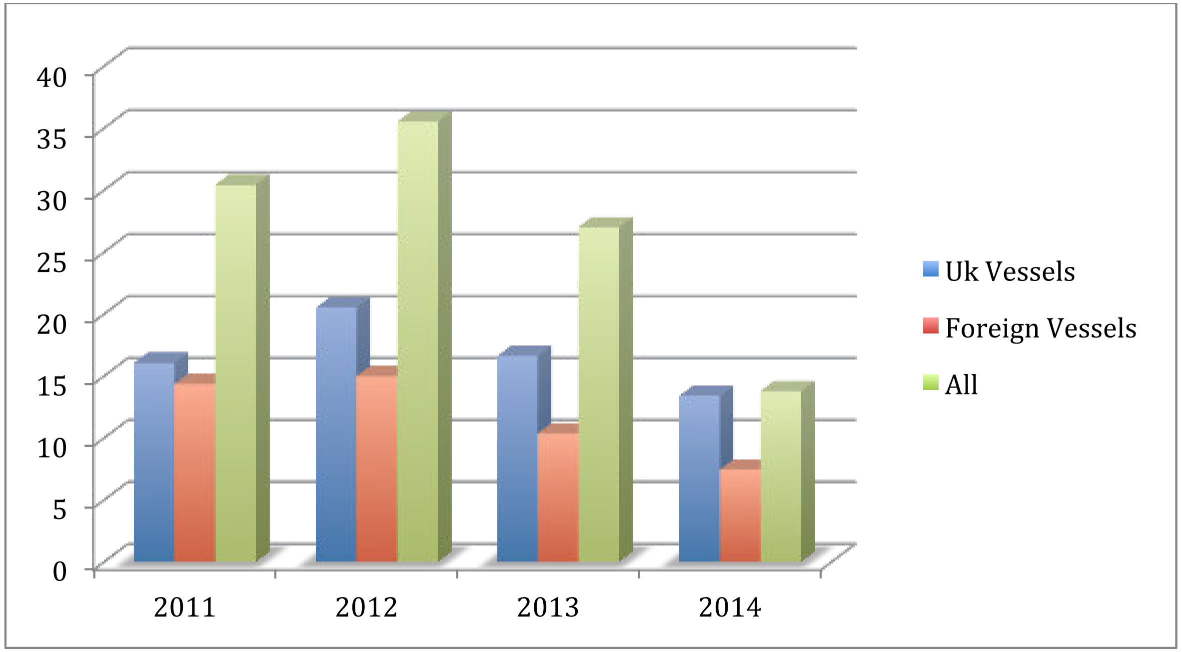


Table 9: Landings (*1) into all Welsh ports by value, 2011 – 2014

Value (£)

	2011	**2012**	**2013**	**2014**
UK vessels	£16,091,235	£20,544,495	£16,640,684	£13,420,439
Foreign vessels	£14,352,540	£14,988,383	£10,381,313	£7,448,593*
All	£30,443,775	£35,532,879	£27,021,997	£13,799,417

*This is an extrapolation and we must advise the reader that there are a number of variables that would influence the actual value.



Main Landing Ports in Wales

There are forty eight ports in Wales where landings are made. However, five ports account for between 60 percent and 80 percent of all landings into Wales by Weight. A detailed quarterly breakdown can be seen at appendix 2.

Figure 2:

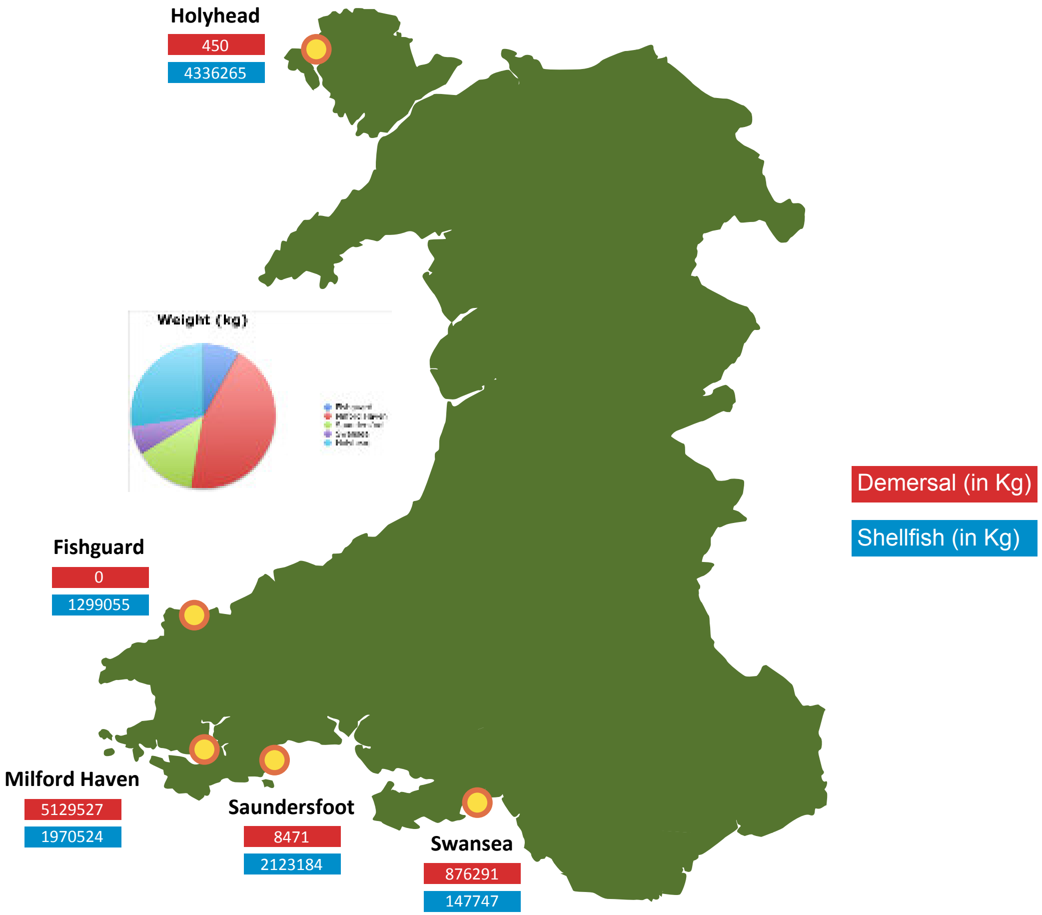


Table 10: Landing statistics into all Welsh ports by species category

Landings (*1) into all Welsh ports by weight and species, 2011 – 2014

Weight (kg)

	2011	**2012**	**2013**	**2014**
Shellfish	15,199,319	20,053,320	13,315,463	9,463,437
Demersal	5,090,686	6,589,530	6,127,596	4,174,728
Pelagic	10,539	4,382	1,483	12,668
All Species	20,300,544	26,647,232	19,444,541	13,650,832

*1 all species by UK vessels

Source: op cit

Landings (*1) into all Welsh ports by value and species, 2011 – 2014

Value (£)

	2011	**2012**	**2013**	**2014**
Shellfish	12,051,668	15,454,977	12,069,727	10,377,323
Demersal	18,382,309	20,070,857	14,950,553	3,420,756
Pelagic	9,797	7,044	1,716	1,337
All Species	30,443,775	35,532,879	27,021,997	13,799,417

*1 all species by UK vessels

Source: opcit

Table 11: Landings (*1) into all Welsh ports for the top seven shellfish species 2011 – 2014

Value (£)

	2011	**2012**	**2013**	**2014**
Scallops	4,543,625	6,851,078	3,678,540	2,702,827
Whelks	2,559,442	3,115,338	3,641,459	3,613,731
Lobster	2293124	2186752	1637415	1783294
Queen Scallops	744,141	1,035,256	1,451,649	888,043
Crabs (C.P.Mixed Sexes)	857,586	894,521	773,108	496,332
Common Prawn	306142	372261	341323	461470
Spider Crabs	385182	315425	146445	115026
Sub Total of selected species	11,689,242	14,770,631	11,669,939	10,060,723
All Shellfish	12,051,668	15,454,977	12,069,727	10,377,323
S/T as % all	96%	95%	96%	96%

*1 all shellfish species by all vessels

Source: op cit

Table 12: Landings (*1) into all Welsh ports for the top seven shellfish species 2011 – 2014

	Weight (kg)			
	2011	**2012**	**2013**	**2014**
Whelk	3,838,328	4,644,175	5,033,247	4,454,357
Queen Scallop	2,020,975	2,532,486	3,449,068	2,096,433
Scallop	2,478,653	3,546,343	2,163,385	1,586,330
Crabs (C.P.Mixed Sexes)	765,740	802,273	680,655	493,666
Spider Crab	311,379	268,270	138,196	112,113
Lobster	220,957	224,602	157,087	182,546
Common Prawn	15,092	18,473	16,905	23,188
Sub Total of selected species	9,651,124	12,036,621	11,638,542	8,948,634
All Shellfish	15,199,319	20,053,320	13,315,463	9,463,437
S/T as % of All	63%	60%	87%	95%

*1 all shellfish species by all vessels

Source: op cit

Table 13: Landings (*1) into all Welsh ports for the top seven demersal species 2011 – 2014

	Weight (kg)			
Species	**2011**	**2012**	**2013**	**2014**
Monks or Anglers	885,176	1,319,748	1,263,520	517,078
Megrim	620,828	939,459	1,027,348	410,436
Sole	702,784	773,700	704,318	663,805
Thornback Ray	314,047	422,960	355,480	249,989
Blonde Ray	240,175	297,212	291,940	292,093
Plaice	281,560	270,828	259,990	265,768
Haddock	174,417	295,400	165,242	90,420
Sub Total (S/T)	3,218,987	4,319,307	4,067,838	2,489,589
All	5,090,686	6,589,530	6,127,596	4,174,728
S/T as % All	63	66	66	60

*1 all demersal species by all vessels

Source: op cit

Table 14: Landings (*1) into all Welsh ports for the top seven demersal species 2011 – 2014

Value (£)

Species	**2011**	**2012**	**2013**	**2014**
Sole	7,257,595	7,087,074	4,834,831	254,963
Monks / Anglers	2,957,211	3,932,279	3,145,038	865,799
Megrim	1,915,856	2,365,408	2,101,143	993,750
Thornback Ray	458,526	635,401	405,674	81,863
Blonde Ray	464,830	480,175	457,057	60,523
Plaice	305,206	266,677	198,905	17,541
Haddock	188,884	286,706	167,172	15,960
Sub Total (S/T)	13,548,108	15,053,720	11,309,820	2,290,399
All	18,382,309	20,070,857	14,950,553	3,420,756
S/T as % All	74	75	76	67

*1 all demersal species by all vessels

Source: op cit

5.2 Aquaculture Statistics

Aquaculture Overview

The United Nations Food and Agriculture Organisation defines aquaculture as ‘the farming of aquatic organisms including fish, molluscs, crustaceans and aquatic plants with some sort of intervention in the rearing process to enhance production, such as regular stocking, feeding, protection from predators etc. Farming also implies individual or corporate ownership of the stock being cultivated.’[8]

The shellfish aquaculture sector in Wales is dominated by mussel production in both north and south Wales. The sector is of such scale that up until 2012 Wales produced the greatest volume of shellfish of any of the home nations accounting for almost a third of production.

By comparison, the finfish aquaculture sector in Wales accounts for just 0.3% of production for the UK, yet there have been innovative re-circulatory aquaculture businesses in North Wales for example involved in the production of farmed sea bass.

Small scale oyster farming takes place along the banks of the Menai Strait and renovation of the oyster beds in Swansea Bay is also underway.

With the UK consumption of shellfish being low in comparison to our European neighbours, mussel for example produced in Wales relies on the export market for sales. UK consumption of mussels in 2010 from Seafish data was approximately 4000 tons.

While the output of the Welsh aquaculture sector is high, the number of employees within the sector in 2012 stood at 34, with 705 employed within the UK as a whole. Finfish production supports 100 employees within the Welsh aquaculture sector.

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8 : www.fao.org/fishery/staistics/glocal-aquaculture-production

Data from CEFAS (Centre for Environment Fisheries & Aquaculture Science) suggest that aquaculture production in Wales stood at nearly 10k tonnes pa during the period 2010-2012. See table below[9]

Table 15: Aquaculture production - Wales

Tonnes

	2010	2011	2012
Finfish	790	761	453
Shellfish	8,963	8,376	8,999
Total: Wales	9,753	9,137	9,452
Total: UK	201,373	198,967	205,134

£

	2010	2011	2012
Finfish	2,965,050	2,840,400	1,438,144
Shellfish	6,100,000	5,740,050	9,008,000
Total: Wales	9,065,050	8,580,450	10,446,144
Total: UK	509,865,980	643,226,785	590,451,617

[9] Source – CEFAS Aquaculture Statistics 2012

A further breakdown of aquaculture activity is provided below, showing that Wales has had a very good position in terms of shellfish aquaculture production.

Table 16:

Aquaculture production - UK

Tonnes

Finfish - tonnes

	2010	**2011**	**2012**
England	8,404	7,311	8,709
Wales	**790**	**761**	**453**
Scotland	159,496	162,777	168,006
NI	1,155	1,060	608
UK	169,845	171,909	177,776
Wales as % of UK	0.5	0.4	0.3

Shellfish - tonnes

	2010	**2011**	**2012**
England	4,001	3,681	6,915
Wales	**8,963**	**8,376**	**8,999**
Scotland	7,483	7,285	6,525
NI	11,081	7,716	4,920
UK	31,528	27,058	27,359
Wales as % of UK	28.4	31.0	32.9

Aquaculture production - UK

Value (£)

Finfish - Value (£)

	2010	**2011**	**2012**
England	24,499,580	19,117,825	21,526,536
Wales	**2,965,050**	**2,840,400**	**1,438,144**
Scotland	453,785,230	599,197,910	532,951,280
NI	3,116,120	2,941,040	1,345,755
UK	484,365,980	624,097,175	557,261,715
Wales as % of UK	0.6	0.5	0.3

Shellfish - Value (£)

	2010	**2011**	**2012**
England	3,400,000	2,782,415	10,060,882
Wales	**6,100,000**	**5,740,050**	**9,008,000**
Scotland	8,300,000	5,130,160	8,773,900
NI	7,700,000	5,476,985	5,347,120
UK	25,500,000	19,129,610	33,189,902
Wales as % of UK	23.9	30.0	27.1

5.3 Gathering Sector Statistics

Intertidal and Hand Gathering Fisheries Overview

Wales has a long history of hand gathering fisheries in both the North and South of the country. From the hand gathered mussel fishery in Conwy and cockle gathering in the Dee Estuary in the North to the gathering of the iconic Laverbread seaweed in South Wales alongside the cockle fisheries of the Burry Inlet. Mussel seed and winkles are also gathered on a small scale.

Both fisheries operate on the licence basis with the Dee fishery being capped at 53 issued each year and 36 issued on the Burry Inlet.

Our intertidal fisheries have supported well established Welsh processing businesses such as Selwyn’s Seafoods and Parson’s Pickles and as such are an important part of the supply chain.

Laverbread has gained somewhat of a resurgence of late with Pembrokeshire Beach Food Company using it as a cornerstone of its product offer and recently winning BBC Food and Farming Awards Best Street Food award in 2014 and Selwyns Seafoods launching an innovative seaweed snack product.

Finally, in this section on landings, we can look at a recent study of the cockle sector conducted in 2015 in response to the recurring mortality rate of 2 and 3 year-classes on the Burry Inlet (Loughour) Estuary (BI) since 2002 and on the nearby Three Rivers Estuary (TR) since 2005[10]

10 http://www.seafish.org/media/1458283/seafish_economic_impact_report_cockle_mortality_burry_inlet_2sep2015_final_report_hw.pdf

Table 17: Burry Inlet and Dee annual cockle landings and nominal first sales value

	1994	2004	2011	2012	2013	2014
Annual output (tonnes)	2,756	3,419	508	1,257	573	672
Nominal; first sales value (£)	497,400	2,979,340	213,360	377,100	229,200	268,000
Average first sales value per tonne	180.5	871.4	420.0	300.0	400.0	398.8

Dee Estuary Landings

We have limited information with regard to the Dee Estuary landings having consulted with Welsh Government who hold no information.

Table 18: Landing figures for the Dee are comparable to Burry Inlet landings

	2010	2011	2012	2013
Annual output (tonnes)	657	1250	820	545

Source: op cit

5.4 Catching, Gathering and Aquaculture Sector Summary

Both the catching and aquaculture sector in Wales provide a broad range of fish and shellfish species for consumption. Having reviewed the data at our disposal, we would place a reliable estimate on the sector value as being £33.7m, noting that this figure is based on data up to 3 years old.

In the catching sector we have identified issues within the labour market with broad variations in those working in the sector on a full and part time basis, alongside vessel that operate on a part time basis. Indeed, of the 477 domestic vessels operating in Wales we identified that in 2013 only 250 were recorded as active.

Of particular interest via the independent survey we undertook of a sample of domestic vessels operating throughout Wales is the variety of species landed throughout Wales. This has included a broad range of finfish, but in low volumes per vessel.

One of the main challenges from the perspective of the catching sector is the landings by foreign vessels and access to these species by operators in the Welsh onshore handling and processing sector.

From the perspective of supply chain co-ordination and efficiency, the gathering and collation of data across both the aquaculture and catching sectors is not kept up to date sufficiently to allow for informed decision making with regard to the sector. In comparison to other sectors such as dairy and red meat, data capture structures are complex and at a minimum, data is up to two years old.

Whilst outside the scope of this study, but raised within the perceptions of the key stakeholders, we would note the regulatory and legislative burden on the industry at production and catching level which is becoming more challenging. Current and robust data with regard to the output of the sector should allow for more informed decision making not only with regard to supply chain development, but the role of the this part of the sector in the food chain.

6. Seafood Processing and Distribution in Wales

Having analysed the provision of raw materials produced and landed by the Welsh catching and aquaculture sector, the main primary research of this supply study focused on identifying the businesses operating in the onshore handling and processing sector in Wales.

It should be noted from the outset that the analysis of the onshore sector is on the basis of assessing the characteristics of the handling and processing sector. It includes information with regard to the processing, handling and distribution of Welsh, UK, EU and non-EU fisheries products and where possible we have provided a breakdown of this.

Numbers operating in the sector has been difficult to ascertain and as part of the assignment we were required to identify a sample population which led to effective population of **64** fisheries related businesses operating in the sector. Of the 64 businesses identified, 55 engaged with the study and responded to telephone interview.

Unlike other industry sectors in Wales, the on-shore side of the fisheries processing and distribution is fragmented, with the presence of:

- Merchants acting distributors
- Merchants as pure logistics providers
- Fishmongers
- Fishmongers involved in processing and added value
- Specialist artisan processors
- Wholesalers
- Food Service Providers
- Retailers
- Fishers Co-operatives
- Producer Organisations
- Direct Sales to Hospitality Trade via Registered Buyers and Sellers (RBS) Scheme.
- Direct Sales to European Buyers

6.1 Key Segments Within the Onshore Sector

Table 19 below provides a breakdown of the main types of businesses operating in the onshore sector. As outlined, we have identified a broad range of businesses operating in the sector as described on page 39, but we have wanted to consolidate these types of businesses into a more defined range of segments operating in the sector:

Processors

Processor operating in the Welsh onshore sector are involved in both primary and secondary processing of product with examples of the processes employed broken down in the descriptors of table 19. Of the sample population those involved in the processing sector in Wales constituted just over two thirds of the onshore sector. Whilst the percentage of those involved in secondary processing is just 5.5%, the number of processors in Wales is encouraging, particularly then set against the view of the key stakeholder respondents that there is insufficient local processing capacity

Merchants

Merchants are defined as those operators in the sector who are engaged in the business of purchasing and sale of fin fish and shellfish to trade customers in either live or dead formats. Representing 20% of the onshore sector, those identifying themselves as merchants in the survey correlated well with the responses of the key stakeholder group. It is without doubt that merchants are a key buying group of Welsh landed fish and shellfish and have a key role in the movement of primary product

Retail

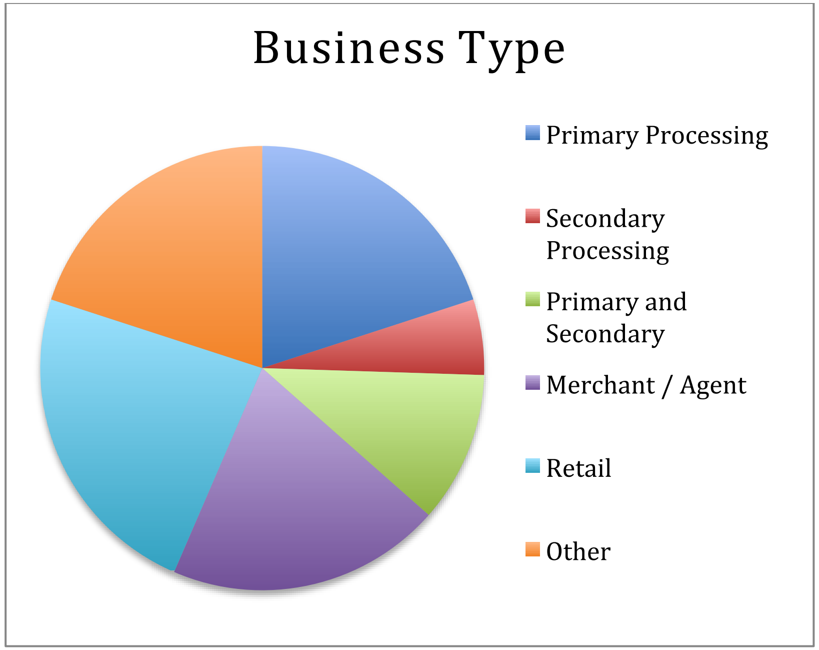
Retail is simply defined as the act of selling fish and shellfish products to the consumer. Within the sample population, 23.5% identified themselves as retail operators with the most obvious group being fishmongers.

Other

Of particular interest and described within the note to table 19 below are those involved in what we classified as ‘other’ business types where a mix of activities exist.

Each of the above market channels do not operate exclusively of one another and often interact with each other in the supply of product to the end customer and this is particularly the case with businesses classifying themselves as ‘other’.

Table 19: Main types of business operating in the on-shore sector in Wales



Main Type of Business	%
Primary processing (i.e. cutting, filleting, picking, peeling, washing, chilling, packing, heading and gutting)	20.0
Secondary processing (i.e. brining, pickling, smoking, cooking, freezing, canning, de-boning, breading, battering, vacuum and controlled packaging, production of ready meals)	5.5
A mix of primary & secondary processing	11.0
Acting as a Merchant or Agent (i.e. buying and selling fish and/or shellfish to trade customers)	20.0
Retailing fish and/or shellfish (i.e. selling directly to members of the public)	23.5
Other *1	20.0
All	100.0

*1 Other: catching, processing and retail, fish farm, fish retail, primary processing & retail (X2), processing & merchant, purification, retail and wholesale, Trout Farm (X2), wholesale.

6.2 Onshore Business Characteristics

To further expand on the key features of the businesses operating in the Welsh onshore sector, we sought to understand their key characteristics in terms of employment, trading history and their financial performance.

Employment

- 20% of the businesses interviewed had one full time (FTE) employee
- 45.3% employed between two and five FTE
- 18.2% employed between six to ten FTE
- 14.2% employed between eleven and twenty five FTE
- One business stated employing over 251 FTE

Trading History

- Almost 60% of businesses had been trading for 10 years or more
- 23.6% have been trading for more than three years but less than 10
- 18.2% have been trading for less than three years but more than one year

Business Turnover

- Almost half of respondents turnover less than £250k per annum
- 20% of respondent businesses turnover between £250k and £500k per annum
- 14.6% turnover between £1.1m and £5m per annum
- 3.6% turnover over £10m per annum

The number of employees per business in the sector combined with the annual turnover figures indicates that businesses operate in the micro and small enterprise classification.

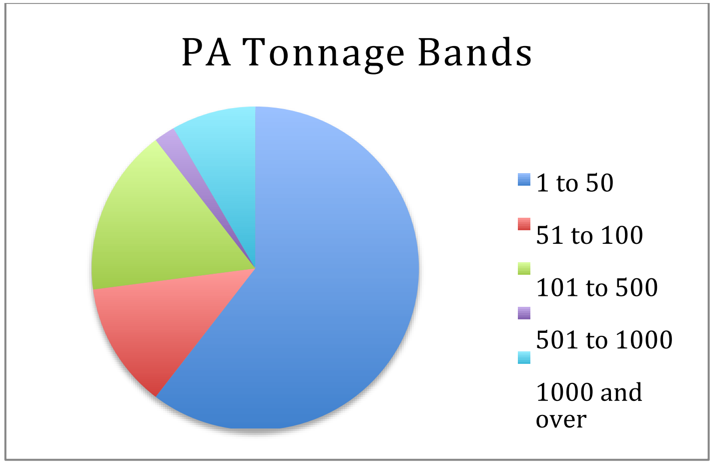
Of particular interest are the number of businesses trading for more than ten years. Indeed there are examples of businesses operating in the sector that are operated by third generation owner managers, with a high degree of provenance attached to the products they have produced for decades.

It is also worth noting that the design of this primary research resulted in the identification of a business outside of the SME definition employing over 251 staff and turning over in excess of £10m. Whilst there was the only business in this bracket to have taken part in the onshore survey, we have identified others within this bracket who are involved in the handling and processing of seafood products.

In terms of the distribution of the onshore handling and processing sector throughout Wales, figure 3 on the following page gives the breakdown of this.

6.3 Product Profiles

Table 20: Tonnage handled by businesses by band per annum



1-50	51-100	101-500	501-1,000	1,001+	All
29	6	8	1	4	48

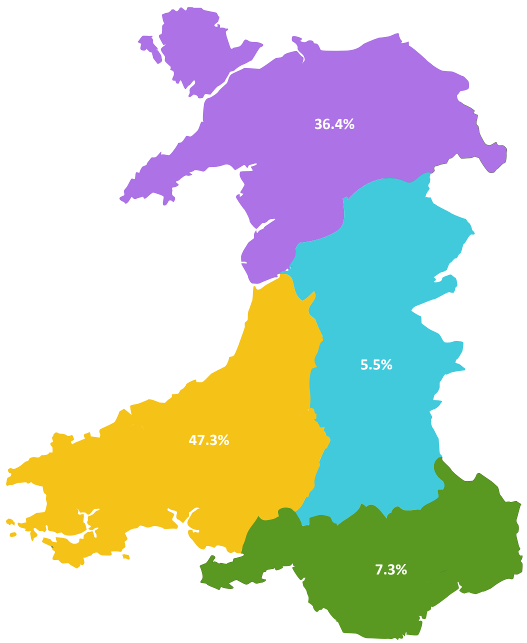
Almost three quarters of businesses in Wales are processing and or handling between 1 and 100 tons of product per annum.

48.3% of businesses interviewed received products for handling and processing live.

Of the live products received 36.5% of respondents stated they were adding value.

Percentage of fish and shellfish split from annual tonnage

Figure 3:

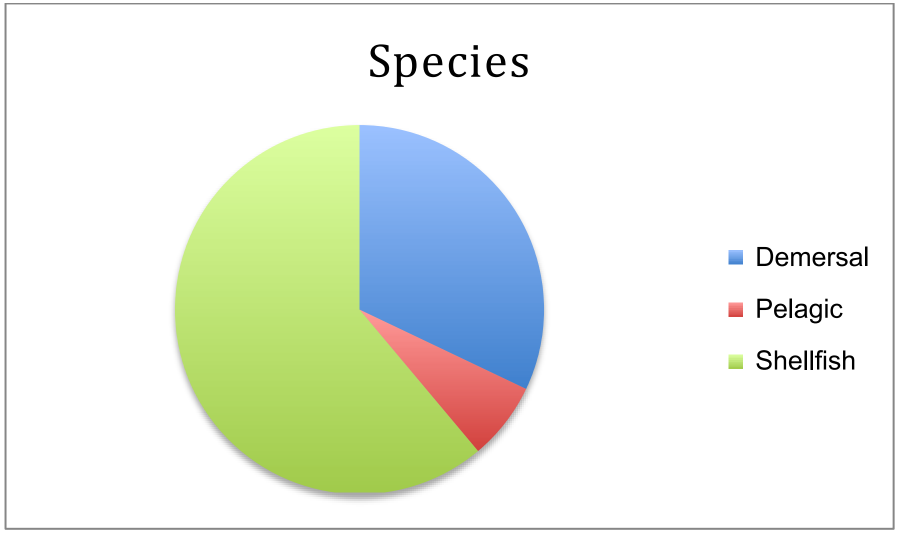


Type by Location (Q1 X Q16)

Frequencies

Type	North	Mid	South East	South West	Other	All
Primary	3	2	0	5	1	11
Secondary	0	0	1	2	0	3
Mix	1	0	0	5	0	6
Merchant	3	0	1	7	0	11
Retail	4	1	2	5	1	13
Other	9	0	0	2	0	11
All	20	3	4	26	2	55

Table 21:



With shellfish being important to the catching sector in Wales, the main species handled are Crab, Lobster, Scallop, Whelk and Mussels, but a percentage of other species were also processed.

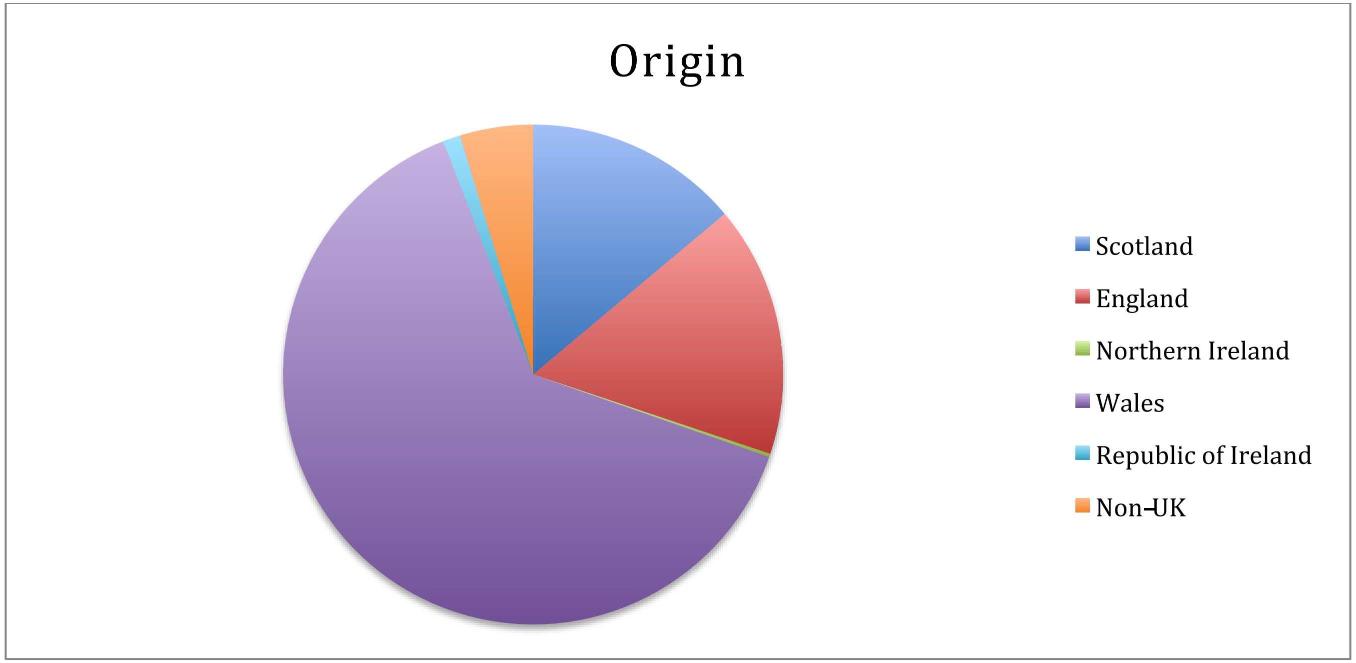
Within the onshore sector, shellfish processing and handling received the greatest response in terms of business activity with 13 out of 19 businesses citing this to account for over three quarters of their activity.

Seven respondents cited demersal species accounting for up to half of their business activity, with three further respondents citing demersal accounting for over three quarters of activity.

Pelagic species accounted for a low level of activity with just one respondent from the processor segment reporting pelagics accounting for up to a quarter of business activity. Merchants and Retailers had a more even spread of involvement with pelagics.

Origin of Product within the On Shore Sector

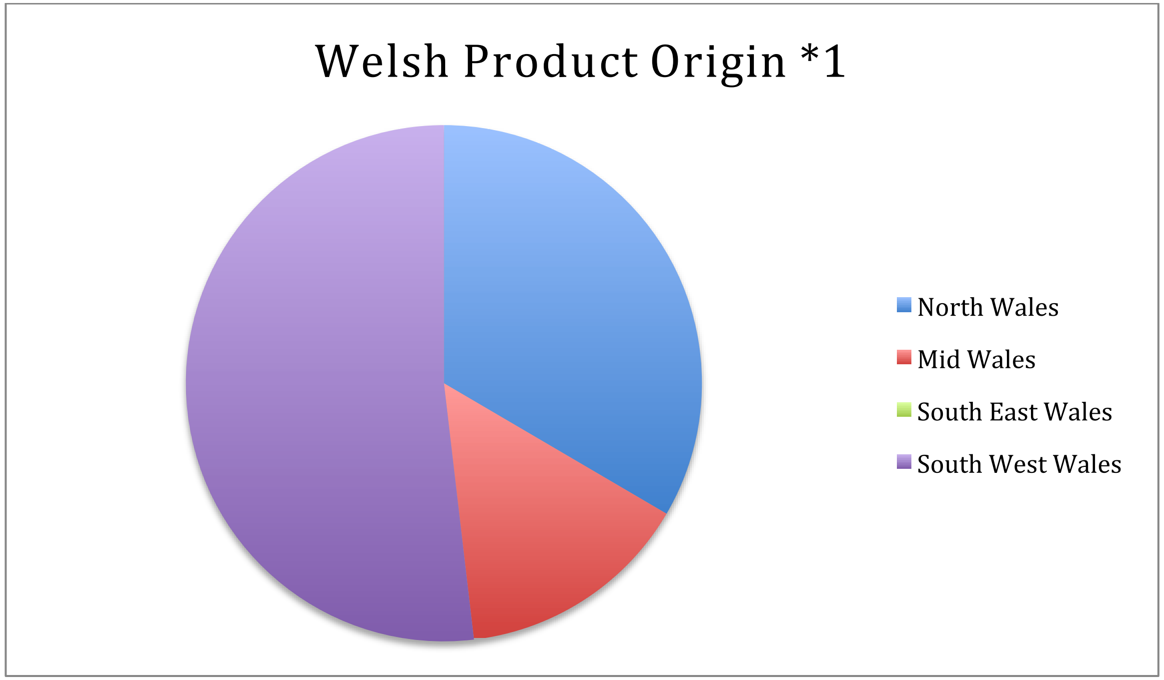
Table 22:



Wales accounts for almost two thirds of the origin of products handled within the onshore sector, with England and Scotland sharing a close split of product into the onshore sector in Wales

Breakdown of Product Origin of the Onshore sector within Wales

Table 23:



*1	North	Anglesey, Conwy, Denbighshire, Flintshire, Gwynedd, Wrexham
	Mid	Powys, Ceredigion
	Sth East	Blaenau Gwent, Bridgend, Caerphilly, Cardiff, Merthyr Tydfil, Monmouthshire, Newport, RCT, Torfaen, Vale of Glamorgan
	Sth West	Carmarthenshire, Pembrokeshire, Swansea, Neath Port Talbot

6.4 Product Sales and Markets

Of the businesses operating in the sector, we sought to identify the total sales of product within the onshore sector being exported outside of the UK

- 24.4% of sales were made to customers outside of the UK.
- Of this percentage, Spain was the main export destination for product sold directly from Wales
- By less than 0.1% France was the next export destination for product sold directly from Wales
- The Netherlands accounted for 2.7%
- Of the other export destinations provided by respondents, these included other European countries including Belgium and Sweden
- South Korea, Asia and the Far East were also destinations for product

Exports

- Overall, eighteen (18) out of the fifty five (55) respondents reported that they were involved in exporting with twelve respondents (12) citing that export accounted for over three quarters of their activity
- Spain was the country that dominated the export of crab, with overall nine (9) respondents citing this country and two (2) respondents citing 76-100% of their crab exports went to Spain
- France was the next most important country for crab, with seven (7) respondents citing this country as an export destination and two citing 51-75% of their crab exports went to France
- Lobster export similar in export destination profile to crab

We would highlight that in the structure of our research the onshore sector has not accounted for the export of product direct from the catching sector or aquaculture sector.

The mussel aquaculture sector in Wales is high in terms of volume production and exports to the Dutch, French and Belgian markets.

Export figures provided by HMRC do not break down product origin sufficiently to provide either species specific information or the origin of the product exported from the processing sector in Wales.

Of those businesses interviewed involved in the sale of Scallop, Whelk and Mussels, the Netherlands, Spain and France were cited as destinations of export. We would note however that this may be for further processing prior to consumption.

Identification of Markets

As stated, shellfish dominates the Welsh seafood sector and at a UK level, the main destination countries in 2013 were, France, Spain, Netherlands, Italy and the Republic of Ireland. These five countries account for some 79 per cent of the total (88.6k tonnes) of shellfish exported from the UK in 2013.

The majority of key stakeholder respondents cited European markets (especially the hospitality sector) as the main end customer segments; with one respondent making the point that catches from Wales are really valued in Europe *'but our fishermen don't see the return (because of the length of the supply chain)*'. They went on to estimate that the majority of the Welsh catch (around 75-80%) is exported.

The respondents from the on-shore survey reported that some 24 per cent of their total sales were from exports . However, it should be noted this respondent group was made up of on-shore business types rather than exclusively fishermen.

When reviewing the length of the supply chain, product handling and the business to business sales identified within the survey, we can make an assumption that while the onshore business export market percentage is low, Welsh product will find its way into export markets as it travels the supply chain.

The respondents from the on-shore survey reported that their main type of customer was the wholesaler followed by independent retailers and the hospitality (hotels/restaurants, etc) and direct to the general public.

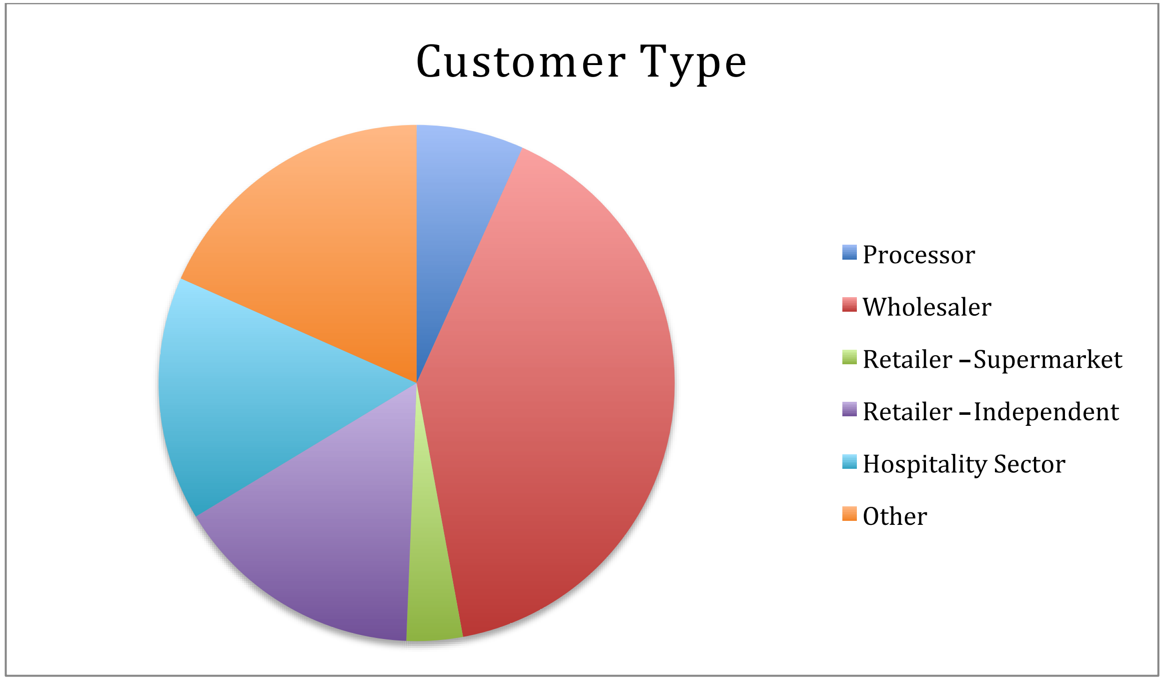
The respondents from the catching sector sample report that their main customers are Merchants (59 to 69 percent) and Wholesalers (16 to 29 percent). In addition, the majority of these customers (59 to 76 percent) are based in Wales.

Table 24 on the following page breaks down the types of customer receiving product from the onshore sector businesses, with further analysis of this provided in the narrative, including the seasonal distribution of product from the sector. To take this further we have also provided two supply chain schematics with detail accompanying notes in appendix 1 to demonstrate the product flows within the supply chain.

Customer Profiles for the Onshore sector

The chart below present a distribution of market channels from businesses operating in the onshore sector in Wales

Table 24:



*of the sales listed under the ‘Other’ heading, all were direct sales to the public.

Of those respondents within the onshore sector, we sought to ascertain the level of business to business (B2B) sales within and from the Welsh sector.

- Few business to business sales were made to processors within the sector, although three respondents cited that over three quarters of their business was selling onto other processors

- Of particular interest was that one merchant cited selling onto processors accounting for up to a quarter of sales

- Wholesalers are an important customer group with twelve processors citing them as a customer and seven processors citing them as accounting for over three quarters of their business

- Wholesalers are also an important customer group for merchants with seven reporting that they account for up to three quarter of their business

- Retail (supermarkets) is a small customer group within the sector

- Retail (independent) is more active with six respondents selling into this segment

- The hospitality sector is serviced across the onshore sector with all selling into this market channel

- Other types of customer is dominated by direct sales to the public

6.5 Distribution

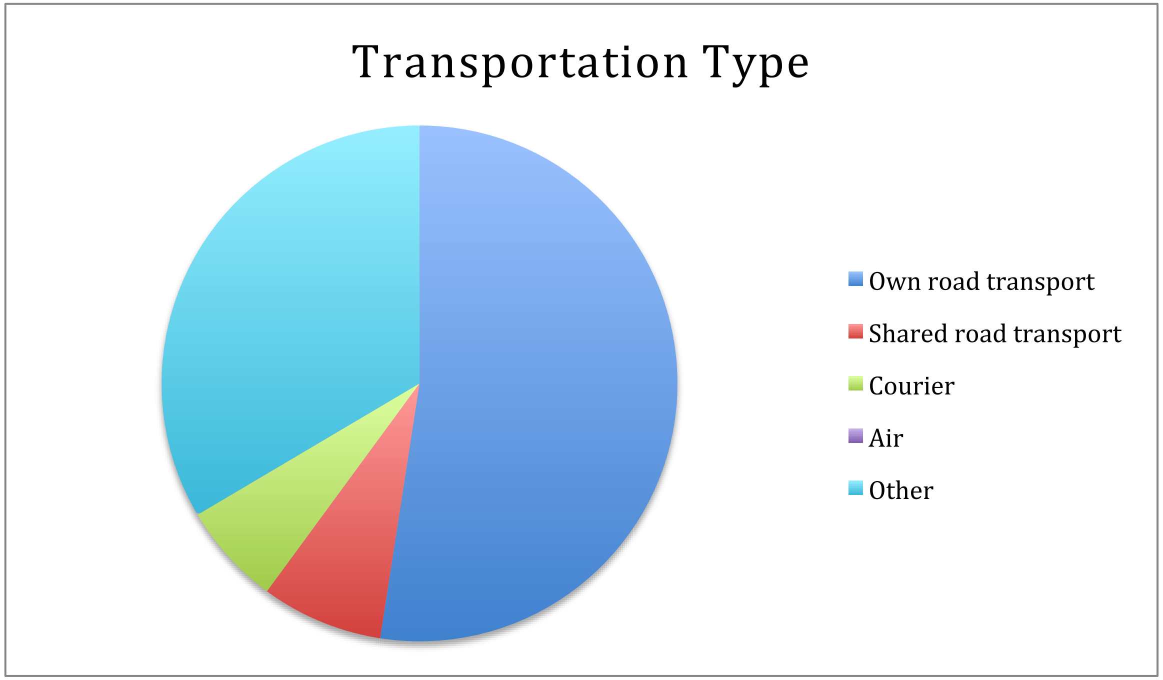


Table 25

Of note on the responses to air transport, this is a well used method of distribution of both live and chilled premium food products. While interview respondents did not cite air transport as a logistics solution, we are aware of at least two operators in the sector who openly market their use of this method to access distant export markets.

A number of respondents stated the use of wholesaler and merchant transportation, well known to the sector as the means of moving live product to traditional continental markets

Other methods were sea containerisation, haulage contractor and hired transport

Distribution within the Supply Chain

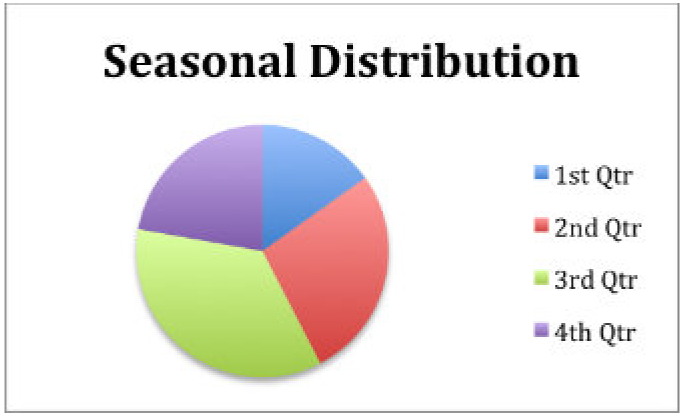
The key stakeholders responded that the catching sector for shellfish is dominated by a small number of merchants. These businesses by their nature are well developed in providing a logistical solution to the movement of live product.

The respondents from the on-shore survey reported that around half of their product was transported on the own transport with some respondents citing shared transport, wholesaler/merchant transport and customers' transport. However, it should be noted this respondent group was made up of on-shore business types rather than fishermen.

In terms of the timing of distribution of product the respondents from the on-shore survey reported the following seasonality:

Q1 - 15 per cent
Q2 - 27 per cent
Q3 - 35 per cent
Q4 - 22 per cent

Table 26:



6.6 Industry Outlook - Onshore Handling and Processing Sector

As part of the survey and to assess the strengths and weaknesses in the sector as we did with the industry stakeholder interviews, we sought views with regard to sector performance and confidence, the results of which are below:

- The number of businesses operating in the onshore sector has been established at 65
- Within the onshore business sector 36.5% of businesses are adding value to product
- Market channels for products landed and farmed in Wales are diverse, often with long supply chains

Strengths and Weaknesses of the Onshore Business Sector

- Almost two thirds of the onshore sector agreed that their turnover had grown in over the last few years
- Over two thirds felt that there had been an increased consumer interest in fish and shellfish
- 58% of respondents felt that business had become more difficult in the last few years
- Whilst home market consumer interest has grown, 30% of businesses saw export markets as being vital, with 25% of businesses actively reviewing new overseas markets to support growth
- Over half felt that legislative issues were affecting their businesses
- Over a third were planning to grow their businesses in the next 3 to 5 years

7. Supply Chain Overview

We have provided a schematic at appendix 1, of product flows within the Welsh seafood supply chain, but as an addition illustration to support our overview of the sector, figure 4 below presents an infographic overview of the supply chain

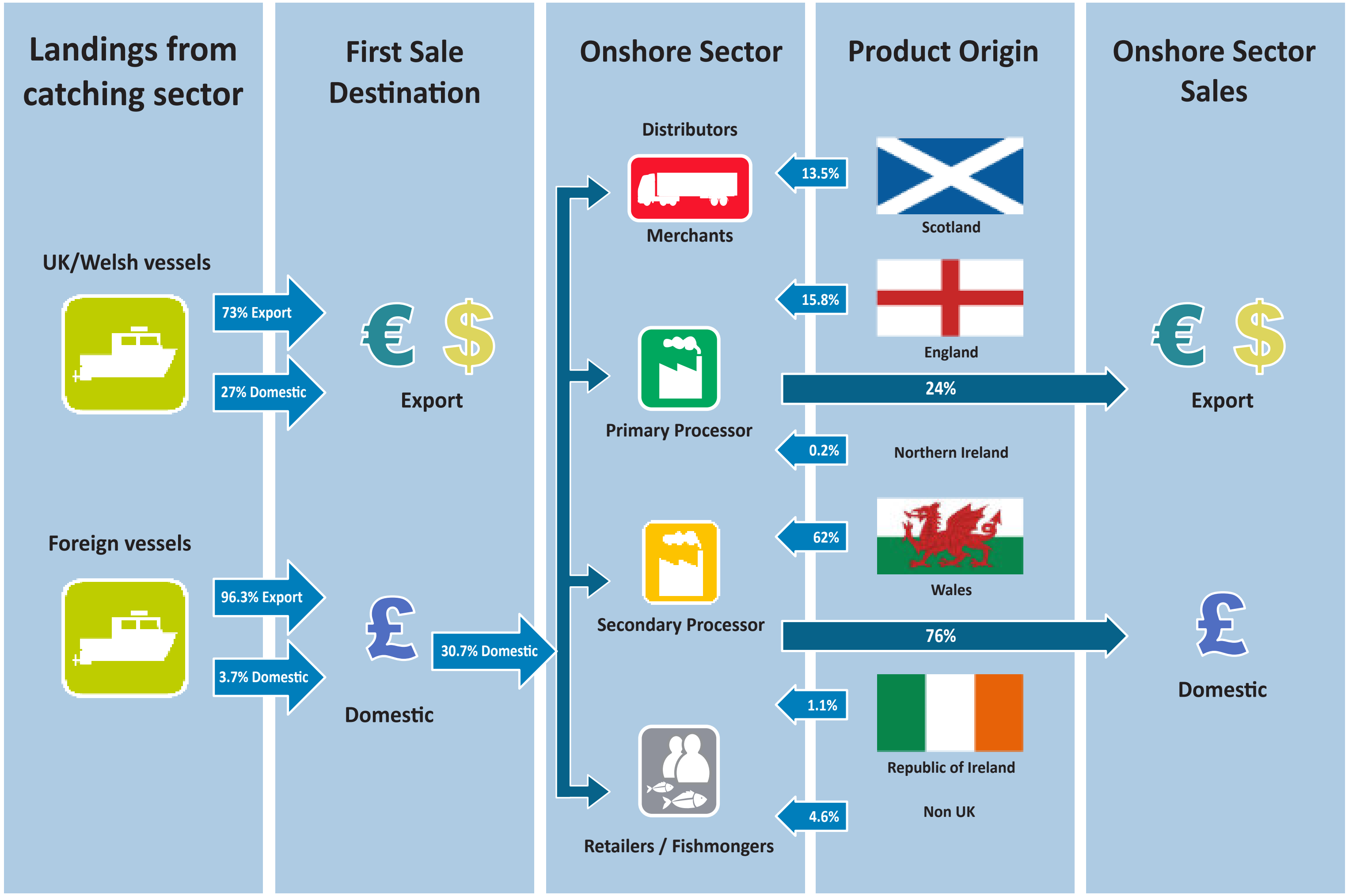


Figure 4

To inform the figure 4 infographic CamNesa used the data gathered from the independent catching sector survey we commissioned as part of this study to understand the destination market for their product.

The onshore sector column shows that the product remaining in Wales is supplemented with product from the wider UK industry and then distributed for onward sale into the export and domestic market. As has been identified in table 21 we are able to validate inward product flows of pelagic species for example due to the negligible landings of this species category into Welsh ports.

The responses from the catching sector survey also validated the views of the key stakeholders that a high proportion of landed catch is destined for export markets, The survey also confirmed the importance of the shellfish merchants role in Wales as a key buyer of product with approximately two thirds of respondents citing this market channel.

When considered against the initial perceptions held within the industry identified by the key stakeholder interviews, the flows of product within the supply chain in Wales are both complex and potentially inefficient.

Setting aside the aquaculture sector for a moment, the catching and gathering sector is characterised by an industry which feels at odds with how its fisheries are managed and how they are perceived. Responses to the stakeholder interviews showed few positive messages with regard to the sector, citing legislative burdens and bad publicity as factors leading to pessimism within the sector.

One key finding of this study however has been the existence of a positive onshore sector which, whilst expressing difficulties in their businesses over recent times there is confidence in the future, with growth planning and identification of new markets.

The extent to which exports play a role as a market channel is viewed strongly by the production and catching sector. The research indicates that within the onshore business community in Wales, market channels are diverse, with exports playing a lesser role to their sales profiles. While the HMRC data for the sector shows a high level of export from the onshore sector, it does not break down into product of Welsh origin.

8. Conclusions

Having outlined data challenges at the beginning of this report, for supply chain and trade development activity to exist, industry requires timely and accurate information with regard to the state of the supply of raw and live product. Accepting that fishing output is subject to a great number of variables, we accept that this will most likely be based on annual trends rather than monthly analysis as opposed to other food sectors.

With this in mind, table 8 shows a decline in the landings over the three years leading to 2015 for both the foreign and domestic fleet into Welsh ports. Given the issue we identified with the data for foreign vessel values in 2014, even discounting this, it is a worrying decline of landings into Wales.

If we are to generalise, we have found that the landings of demersal species of volume and value are largely landed by foreign registered vessels and is almost entirely destined for export. The indigenous fleet are orientated around the landing of shellfish species, but certain fin fish species such as sea bass are important alongside a broad range of species identified in small volumes as part of the catching sector survey CamNesa undertook.

It was of interest that the gathering sector in Wales was not noted by the key stakeholder respondents. While the hand gather sector is low in terms of volume across the cockle, seaweed and mussel gathering activities, the history and provenance of these fisheries alongside our iconic coracle fishermen are hugely important in identifying key characteristics of the Welsh seafood offer.

Moving to the aquaculture sector, as previously stated, in terms of shellfish and particularly mussel, Wales certainly stands out its weight in terms of production and it is important to highlight its contribution to the seafood sector in Wales

The key element of this study was to undertake a primary research exercise into the seafood processing and distribution supply chain in Wales. With the fisheries and seafood sector in Wales being identified as a key sector within Welsh Government’s Food and Drink Action Plan it was timely to develop an understanding of the sector and the supply chain.

Of the 64 active businesses we identified in the sector and the 55 responses were received, we were able to present research findings that indicated a sector of predominantly small businesses involved very much in the processing and handling of shellfish and demersal species in Wales.

Indeed, the research has countered what was perceived as a lack of processing activity in Wales and adding value to landed catch as well as the traditional roles of the merchants in product handling. When the landing figures for common shellfish species such as crab and lobster are considered against the activity of the onshore processing sector, we would take the view that the sector is operating close to limits of primary product availability and this is highlighted by the inflows of product from other areas of the UK and non-UK product for processing.

As highlighted within the industry outlook, there is positivity within the onshore processing and handling sector with regard to the future, both in terms of growth and seeking new markets for products. Our recommendations will be formed around this positivity and how it may support those operating in the catching, gathering and aquaculture sector in the creation of a more cohesive supply chain.

9. Recommendations

Data Collection and the Establishment of a Market Information System

We are aware of the statutory requirements for data collection by Welsh Government within the sector, but we have identified the need to ensure that industry is able to receive timely information with regard to all parts of the supply chain and particularly have access to trends in particular target markets such as export. This will enable the onshore sector in particular to make informed decisions with regard to where they target their sales resource.

Seafish already promotes UK Trade and Investment guides to exporting to specific markets such as Denmark, but further work could be undertaken by Seafish Wales on consumer requirements for specific products within target export markets.

As part of this study, we have provided Seafish with a framework for a Market Information System to take forward, defining data sources, an outline design for information processing and how this information may be disseminated to industry.

Supply Chain Efficiency and Co-operation

Supply chain efficiency and co-operation have been key components of the Rural Development Plan supporting the agriculture and processing sector in Wales for some years.

The are clear similarities between the fisheries and agriculture sector in terms of what is perceived to be low prices for primary product and within the catching sector at least, a volatile labour market and varying frequency of vessel operation to be able to supply. A key ingredient of potential co-operation is communication and integration throughout the supply chain.

We have touched on a key element of this in the development of the Market Information System, but to support the primary production part of the fisheries supply chain, we would recommend the further support to take early stage partnerships of primary producers through barriers which can lead to shorter and more efficient supply chains with better returns for themselves. There has been some success of this within the delivery of the programmes in Wales under European Fisheries Fund.

As we have commented upon in the conclusions, it is important to achieve a balance between the actual output of the catching, gathering and aquaculture sector in Wales and the onshore handling and processing sector. As has been highlighted in the key stakeholder interviews, the primary production sector is one under pressure from multiple factors. Our findings from the interviews conducted correlate with other studies undertaken at regional level in Wales that have included focus group work with the fishing community and the messages have been consistent.

Supply chain efficiency and co-operation support, provided in a structured format with full engagement of the industry could go some way to building as positive a view as the onshore sector has of the short to medium term aspirations for the sector. We feel that this will be key to establishing what the Welsh seafood offer is to both the trade and consumer which brings us onto our final recommendation

A Welsh Seafood Strategic Plan

To bring together the findings of this report, we believe that in line with the ambitions of the Welsh Government's ambition for 30% growth within the food and drink sector by 2020, a strategic plan focusing on how the fisheries sector can grow sustainably is vital. It is vital from the viewpoint of having an industry group such as the Seafish Wales Advisory Group engaged in the process of developing such a plan, maximising the use of limited European Maritime and Fisheries Funding available in Wales to achieve growth.

We are aware that much work has already been undertaken on the development of an industry development strategy by Sea Fish in conjuction with industry representatives in 2014/15 in preparation for EMFF and this should be incorporated into forward planning for the Seafood Plan to inform a holistic supply chain approach

10. Appendices

Appendix 1 – Schematic of the Seafood Supply Chain

Appendix 2 – Quarterly breakdown of landings at the top 5 Welsh ports

Appendix 2 - Schematic of the Welsh Seafood Supply Chain

We have developed a series of schematics of the Welsh Seafood Supply Chain from a combination of secondary research data (e.g. Marine Management Organisation, etc) and original primary quantitative research undertaken by CamNesa Consulting with respondents drawn from the Welsh seafood supply chain.

We have presented our findings in the form of two schematics, Part One focusing on the Catching & Aquaculture sector and Part Two on the On-Shore sector. We have done this because whilst there is a link between the catching (or off-shore) sector and the Welsh aquaculture sector and the on-shore supply chain, the two sectors are really related, but separate markets rather than a cohesive whole. For instance, the on-shore sector reports that some 62 percent of its supply is sourced from Wales (i.e. 7.1 k tonnes) with the balance for elsewhere. In addition, we have identified cross trading of product within the defined on-shore segments (e.g. from processor to wholesaler, and even processor to processor).

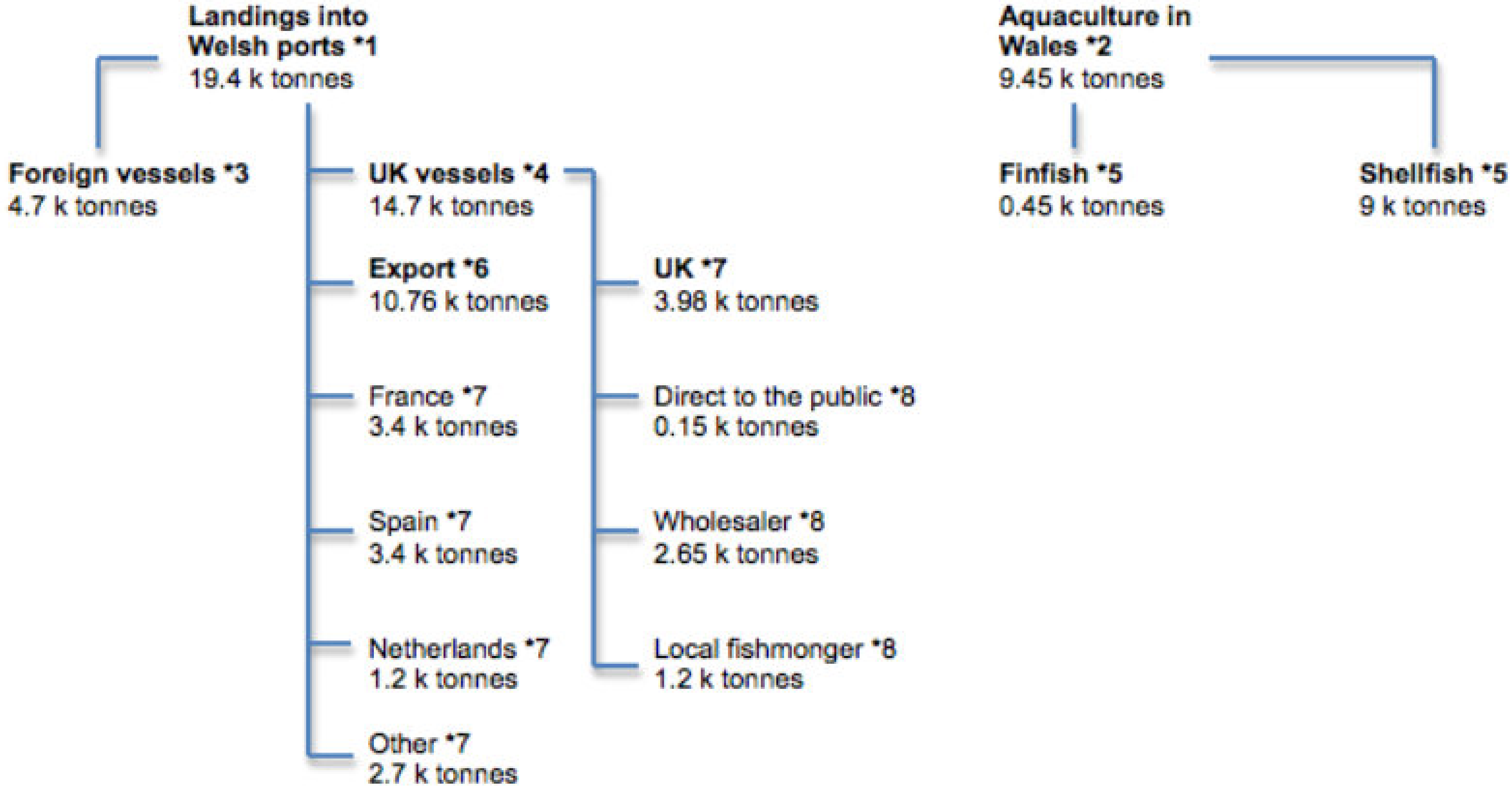
Consequently, to provide the most accurate representation and clearest picture of the nature of the supply chain, we have constructed two schematics as described above.

Each schematic is presented below with a set of notes supporting each entry in each schematic and we would ask that the notes are read carefully when interpreting the data and consideration of the supply of product for processing from outside of Wales in the onshore sector.

The Welsh Seafood Supply Chain

PART ONE – CATCHING & AQUACULTURE SECTOR

Volume (000's) tonnes - 2013



Notes to Part One:

1. Landings into Welsh ports is based on MMO figures and includes landings into all Welsh port of all species by all vessels for 2013
2. Aquaculture in Wales is based on the CEFAS report and the volumes reported are for the most recent year covered by that study, 2012
3. Foreign vessels accounted for 4.7 k tonnes (24%) of landings into all Welsh ports in 2013
4. UK vessels accounted for 14.7 k tonnes (76%) of landings into all Welsh ports in 2013
5. Aquaculture mix between finfish and shellfish comes from4 CEFAS
6. Exports from the UK landings into Welsh ports are based on findings from CamNesa's survey of fishing vessels, which found that 73% of fishermen's landings were reported as being exported. The breakdown by country of destination is based on CamNesa's on-shore survey and MMO data.
7. Volume retained in the UK from the UK landings into Welsh ports is based on findings from CamNesa's survey of fishing vessels, which found that 27% of fishermen's landings were reported as being retained in the UK. The breakdown by type of customer in the UK is also based on CamNesa's survey of fishing vessels.

The Welsh Seafood Supply Chain

PART TWO – ON-SHORE SECTOR *1

Volume (000's) tonnes

Total Tonnage handled *2
11.4 k tonnes

Processors *3 8.68 k tonnes	Merchants *3 1.87 k tonnes	Retail *3 0.1 k tonnes	Other *3 0.75 k tonnes

By Type of Customer *4

Processors *3	Merchants *3	Retail *3	Other *3
Processors 1.56 k tonnes	Processors 0.01 k tonnes	Processors 0 k tonnes	Processors 0 k tonnes
Wholesalers 3.3 k tonnes	Wholesalers 1.37 k tonnes	Wholesalers 0.01 k tonnes	Wholesalers 0.39 k tonnes
S. Markets 0.56 k tonnes	S. Markets 0.11 k tonnes	S. Markets 0 k tonnes	S. Markets 0 k tonnes
Independents 0.87 k tonnes	Independents 0.01 k tonnes	Independents 0.05 k tonnes	Independents 0.03 k tonnes
Hospitality 1.22 k tonnes	Hospitality 0.37 k tonnes	Hospitality 0.02 k tonnes	Hospitality 0.1 k tonnes
Other 1.17 k tonnes	Other 0 k tonnes	Other 0.03 k tonnes	Other 0.24 k tonnes

Notes to Part Two:

1. The source for this stage of the market mapping is based on the primary quantitative research undertaken by CamNesa Consulting in the Autumn of 2015
2. Total tonnage handled is taken from respondents' answers. The total tonnage reported here understates the true tonnage for the sector because a small number of potential respondents did participate in the study. Of the reported total tonnage, 62 percent is sourced from Wales (i.e. 7.1 k tonnes) and 4.3 k tonnes (38%) from elsewhere
3. Tonnage handled by each type of respondents is drawn from a cross tabulation of 'Type' and total tonnage handled is taken from respondents' answers.
4. Tonnage by type of customer is drawn from respondents' reporting of their sales by type of customer.

Appendix 2 – Quarterly landings in to top 5 Welsh Ports

Weight (kg)

		2011	**2012**	**2013**	**2014**
Fishguard	Q1	556,951	1,451,418	373,566	201,287
Fishguard	Q2	407,507	431,707	416,562	469,219
Fishguard	Q3	134,630	377,347	355,304	56,878
Fishguard	Q4	410,559	288,618	139,064	133,483
	Year	1,509,648	2,549,090	1,284,495	860,868

Milford Haven	Q1	1,722,753	2,299,907	2,493,511	1,284,383
Milford Haven	Q2	1,508,069	1,758,366	1,864,554	1,635,573
Milford Haven	Q3	1,126,978	1,361,057	1,373,780	900,179
Milford Haven	Q4	1,545,485	1,862,638	1,324,808	409,665
	Year	5,903,284	7,281,968	7,056,653	4,229,801

Saundersfoot	Q1	329,489	483,739	403,967	202,727
Saundersfoot	Q2	479,161	665,300	753,049	829,564
Saundersfoot	Q3	481,984	480,282	619,109	338,993
Saundersfoot	Q4	306,036	344,628	355,531	265,058
	Year	1,596,670	1,973,949	2,131,655	1,636,342

		2011	2012	2013	2014
Swansea	Q1	172,905	248,181	100,382	223,162
Swansea	Q2	427,134	458,414	483,298	567,883
Swansea	Q3	384,669	478,028	330,298	307,832
Swansea	Q4	124,872	245,923	110,171	78,141
	Year	1,109,580	1,430,546	1,024,149	1,177,017
Holyhead	Q1	731,120	1,327,486	685,541	813,284
Holyhead	Q2	526,496	689,932	1,022,364	758,911
Holyhead	Q3	845,272	1,048,547	1,177,082	786,100
Holyhead	Q4	672,269	386,717	1,451,728	688,414
	Year	2,775,158	3,452,682	4,336,715	3,046,709
Sub Total (S/T)	Year	12,894,339	16,688,234	15,833,667	10,950,736
All Wales	Year	20,300,544	26,647,232	19,444,541	13,650,832
S/T as % all Wales		63.5	62.6	81.4	80.2

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- Marine Management Organisation
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