

Tegen Mor Fisheries Consultants Ltd.

Mapping the Seafood Supply Chain in the Dorset & East Devon FLAG Area



Dorset AONB Partnership

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Marine
Management
Organisation



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1. EXECUTIVE SUMMARY

Covering the 100-mile stretch of coastline from Beer in the West to Swanage in the East the Dorset & East Devon FLAG was launched in March 2017 with an award of £800,000 to deliver Community-Led Local Development (CLLD) in the area's fisheries, aquaculture and seafood sectors.

One of the key aims in the FLAG's Local Development Strategy (LDS) is to "enable innovation to increase the value of catch and products". To deliver on this aim the Dorset Area of Outstanding Natural Beauty (AONB) Partnership commissioned Tegen Mor Fisheries Consultants Ltd to undertake research and analysis of the seafood supply chain within the FLAG area.

The study area covers 8 main landing sites recognised by the Marine Management Organisation (MMO), these are: Axmouth, Beer, Lyme Regis, Lulworth, Portland, Swanage, West Bay and Weymouth. The fleet consists of 108 licensed, commercial fishing vessels that employs an estimated 174 fishermen. In 2017 this fleet collectively landed 2631 tonnes of fish and shellfish worth £6.8M (at first sale price). Landings of shellfish (crab, lobster, whelk, cuttlefish, scallop and spider crab) account for 79% of the total catch tonnage and 65% of the value.

The onshore seafood supply chain of the Dorset and East Devon FLAG area consists of 12 fish /shellfish wholesale and processing business and 9 fish / shellfish retail outlets supporting an estimated 122 Full Time Equivalent (FTE) jobs and turning over an estimated £19.5M of gross sales pa.

With the exception of Weymouth landings in the study area are highly seasonal. This is due in part to a reduction in crab and lobster feeding at lower water temperatures and in part due to poor winter weather

preventing the predominantly under 10m fleet from fishing.

Of the £2.4M of wetfish (or 'whitefish') landed, bass and sole are the most significant species accounting for £1M (42%) of wetfish landings. These are either sold via fish auction markets at Brixham or Plymouth, or to local processors supplying foodservice outlets locally and nationally. Limited quantities of whitefish are sold into national multiple retail (i.e. supermarket) supply chains as supplies are too in-consistent to support the long-term contract sales required by this section of the market. The remainder is purchased by other UK seafood processors or wholesalers that aggregate stock and export to Europe where demand (and therefore price) for many of the species landed is greater than in the UK.

With the exception of whelks, which are collected daily by processors from outside of the FLAG area, the local fleet generally land shellfish to local shellfish wholesalers (live sales) and processors (i.e. those that 'add value' through boiling and picking). Larger visiting vessels using Weymouth as a landing port offload catches directly into waiting vivier lorries (these are fitted with aerated seawater tanks to keep shellfish alive and are used to transport live shellfish across Europe but most commonly Spain, France and Portugal).

In recent years demand and price have risen for all species of shellfish landed in the FLAG area but crab in particular has seen a strong increase in price due to the rapid growth of the

developing Chinese market. When supplies are limited this has resulted in a doubling of price compared to 3yrs ago. While benefitting catchers these high prices have impacted negatively on the profitability of local crab processors who reported. Despite these pressures on supply there are notable exceptions in the area of successful small family businesses catching and processing their own shellfish catches. However, the local market supplied by these businesses is finite so opportunities to further develop this sector appear limited.

The end market for approximately 73% of the catch (by value) is export, either to the EU (mostly France, Holland, Spain and Italy) or, in the case of whelk and crab, to the growing market in Asia. These markets typically require live or unprocessed fish and shellfish, preferring to add value locally or consume in whole form so there is limited scope for processed products. To ameliorate against transport costs the export trade is usually conducted in bulk and it is unlikely that landings from the FLAG area alone would be sufficient in terms of volume or continuity to become a significant force in these markets.

Sustainability scores of fish and shellfish arrived at by Non-Governmental Organisations (NGOs) such as the Marine Conservation Society (MCS) or seafood certified as sustainable by the Marine Stewardship Council (MSC) can have a powerful effect on the market demand of a species. For example, wild line caught sea bass, once the darling of the eco-diner, was for many years on the MCS 'fish to eat' list. In recent years however,

scientists have become increasingly concerned about the health of bass stocks and currently bass are scored at the lowest level (1) and are an unenviable addition to the 'fish to avoid' list.

In the UK, multiple retailers and leading national foodservice companies source their seafood using a decision tree methodology that considers MCS sustainability scores, with most refusing to purchase (and then sell) any fish / shellfish species rated 5 (the worst) by the MCS. Conversely, evidence from the Cornish sardine and Cornish hake fisheries, that have both achieved the coveted Marine Stewardship Council (MSC) certification, suggests that the so-called 'ecolabel' had led to a significant increase in UK sales volume and demand.

Given the good sustainability data of some key stocks (most notably lobster and sole) and relatively small-scale fleet made up almost entirely of static gear vessels (>95%) the area of sustainability appears to offer the greatest opportunity to catalyse growth in demand and value of fish and shellfish landed in the FLAG area.

To realise this potential further work should be carried out to progress MSC certification to species caught and landed in the FLAG area. For lower value parts of the catch alternative independent sustainability scoring such as the Seafish Risk Assessment for Sourcing Seafood (RASS) should be considered.

The strong sustainability credentials of the FLAG area could then in turn be used to underpin a revised regional seafood brand for use in business to business (B2B) and business to consumer (B2C) marketing channels.

2. RESEARCH BRIEF

This study was commissioned by Dorset AONB Partnership to meet a need identified in the Dorset and East Devon Fisheries Local Action Group Local Development Strategy to identify the potential for adding value to locally-landed seafood.

The scope of the study included all ports, harbours and beaches within the Dorset and East Devon FLAG area and all economic seafood supply chain activities from 'net-to-plate' i.e. from catcher, merchant, processor, retailer and restaurateur.

The study also considered the demand and opportunities for processed and un-processed locally landed fish and shellfish products within seafood markets locally, nationally and internationally. In order to deliver on the project aim it was necessary to:

- a.** collate and review existing datasets on all aspects of supply chain dynamics;
- b.** undertake direct stakeholder engagement in order to fill data / knowledge gaps identified in part a);
- c.** provide analyse and actionable insight provided to underpin the development and delivery of high-quality projects, providing sustainable economic benefits for the D&ED FLAG seafood industry.

Direct stakeholder engagement was conducted using a range of techniques; including face-to-face interviews, meetings and telephone interviews.



3. KEY HIGHLIGHTS OF STUDY FINDINGS

This section highlights key findings from the research.

CATCHING SECTOR

- In 2017 2631 tonnes of fish and shellfish were landed worth £6.8M.
- The fishing fleet within the area consists of 108 vessels, of which 100 are under 10 metres in length.
- There are an estimated 174 fishermen in the area.
- Shellfish dominates the landings in the study area with lobster, crab, whelk, and scallops being the main species, collectively accounting for 90% of the tonnage and value landed in 2017.
- Landings by larger visiting vessels which regularly land shellfish at Weymouth account for approximately 30% of total landings
- Sector interviews confirmed the importance of local shellfish stocks but underlined the importance of some of the high value, low volume fisheries demersal fisheries such as bass and sole.

HARBOURS & MARKETS

- The study area has 5 landings stations recognised in the Marine Management Organisation (MMO) official statistics, these are Axmouth, Beer, Lulworth, Lyme Regis, Portland, West Bay and Weymouth.
- The £3.7M worth of landings made at Weymouth accounted for 57% of the total catch landed in the area. Lyme Regis landings represented 20% of the total and West Bay 10%.
- Landings in all ports are highly seasonal due to the predominance of under 10 metre

vessels in the fleet which are less able to fish in adverse weather conditions during the winter months.

- Daily transport links are in place to transport 'wetfish' for sale at both Plymouth and Brixham fish auctions.
- Crab and lobster landings by the local fleet are mostly made directly to local wholesalers and processors. Whelks are collected from the port of landing by processors located outside of the study area.

PROCESSING SECTOR

- The processing sector consists of 12 companies employing an estimated 110 full time staff and accounts for 4% of the UK total (by number).
- Turnovers in the region's processing sector ranged from an estimated £60k pa to £11,000k pa.
- The main cluster of wholesaling / processing businesses is in the Weymouth and Portland area, reflecting the close proximity to the largest landing port in the area.
- Shellfish wholesaling and processing is the dominant activity producing processed crab and scallops for markets in the UK and EU.
- Whitefish processors source most of their supplies from outside of the area and supply into local and national and retail and foodservice (pubs, hotels and restaurants) outlets.

RETAIL SECTOR

- The Dorset and East Devon FLAG area has 9 independent fishmongers
- Farmers markets are a well-established retail market in the area that are already being utilised by a small number of businesses.
- There is a small number of successful family-run vertically integrated catchers-sellers.
- Interviews with stakeholders suggested there were more small fish retailers with market stalls or van sales but verifying their exact numbers was difficult.
- Many retailers source locally landed fish when possible but recognise that many of the species sold are imported from outside of the area.
- One national retailer sources from a processor in the FLAG area.

AQUACULTURE SECTOR

- The sector is currently limited to relatively small-scale oyster production.
- The FLAG is supporting a project to identify the potential for increased aquaculture activities in the area and mapping the route to how this can be realised.
- The largest offshore UK mussel farm sits adjacent to the Western boundary of the FLAG area.

4. INTRODUCTION

This section provides background and context to the study.

4.1 Fisheries Local Action Group (FLAG)

Fisheries areas across the EU are facing significant challenges. The continuous decline in income and employment in the fishing sector has underlined the need for innovative responses that are both sustainable and inclusive.

Community-Led Local Development (CLLD) is a tool that enables local fisheries communities to address these challenges at a grass-roots level using the knowledge of local stakeholders to tackle local issues. The European Maritime and Fisheries Fund (EMFF) in England has funded 6 Fisheries Local Action Groups (FLAGs) to deliver fisheries focused CLLD in England.

4.2 Dorset and East Devon FLAG

Launched in March 2017 the Dorset & East Devon FLAG was awarded £800,000 to deliver community-led Local Development in the area's fisheries, aquaculture and seafood sectors between Swanage and Beer. A local development strategy (LDS) has been developed by working with key stakeholders – their key priorities include:

- encourage and enable effective collaborative working across and within sectors
- strengthen the aquaculture sector in Dorset
- improve infrastructure and equipment to enable safe, sustainable working ports and harbours
- enable innovation to increase the value of catch and products
- support the industry by enabling diversification, up-skilling and training, and increase the knowledge and understanding of the sector to attract a younger workforce

4.3 FLAG Priority 4: enable innovation to increase the value of catch and products

The Dorset and East Devon FLAG covers the 100 miles of coast from Beer in the West to Swanage to the East. The area has 8 main landing sites recognised by the Marine Management Organisation (MMO), these

are: Axmouth, Beer, Lyme Regis, Lulworth, Portland, Swanage, West Bay and Weymouth.

The local fishery has an extremely diverse range of fish and shellfish species and there is small aquaculture sector. The area has one of the largest concentrations of under 10m fishing vessels in the country. The Lyme Bay Fisheries and Conservation Reserve is located in the area and there are a number of Marine Protected Area designations.

The Dorset and East Devon Coast is a world-renowned tourist destination and as a result the area has a wide range of out of home eating establishments from fish and chip shops to white table cloth fine dining, where seafood is often on menus.

The nearest fish auction is at Brixham - 84 miles from Weymouth, the main port in the area, and London is 134 miles from Weymouth by road. Access to markets in continental Europe is via the ferry link in nearby Poole for via the Channel tunnel.

5. METHODOLOGY

This section describes the aims of the research and outlines the approach taken to meet these aims. It also highlights limitations in the data available.

5.1 Aims

The aims of this study were to:

- a. Research and collate a comprehensive range of quantitative and auditable datasets covering the activities of all links in the D&ED FLAG seafood supply chain from 'net-to-plate' on a local, regional and national basis.
- b. Undertake analysis of these datasets and provide actionable insight to support the development and delivery of high-quality projects, providing sustainable economic benefits for the D&ED FLAG seafood industry.

5.2 Approach

To achieve these aims the project team sought to explore and quantify commercial, logistical, technical and financial constraints and opportunities of a range of scenarios developed in conjunction with key local stakeholders.

5.2.1 Interviews

The main tool for gathering supply chain supply chain intelligence was through informal one-to-one interviews with key actors across through the supply chain, vertically (from catcher to retailer/foodservice), horizontally (from small to large within each sector) and across a UK wide geographical range.

The preferred method of interview was face-to-face with telephone interviews used to fill

any gaps identified or to follow up additional leads. Interviewees were offered anonymity and or for the interviewer to sign a Non-Disclosure Agreement (if required).

Potential interviewees were targeted through the production of a matrix which mapped supply chain sectors geographically and which drew on intelligence from sector experts.

Supply chain sector	No. of consultees
Fishermen and representative bodies	6
Harbours, agents and port auction managers	2
Processors	5
Bait	1
Foodservice	3
Exporters	3
Science & administrators	2
Retailers	4
Community Supported Fisheries	2
Direct sea-to-plate supply initiative	1

Table 1: Number of interviews by supply chain sector:

5.2.2 Analysis

The results of desk research, stakeholder interviews and internet survey were analysed with the objective of developing a strategy and, where possible, providing actionable insight in the areas:

- local fleet landings and fleet dynamics
- local fish supply chains with a view to adding value
- the sustainability of locally caught fish and shellfish stocks
- understand the end markets for locally landed fish and shellfish
- understanding the economic opportunities across the sector
- making recommendations in keeping with the FLAG objectives

5.2.3 Reporting

As set out in the project tender document, the reporting of project research and findings consist of:

- a. the submission of a draft final project report to FLAG members for comment, discussion and feedback;
- b. delivery of a final report to the client group, highlighting key findings against the objectives and recommendations for next steps

5.3 DATA LIMITATIONS

5.3.1 GDPR

Access to contact details for key stakeholders was an issue due to the rigid application of new GDPR rules by the FLAG secretariat. It is recommended that this policy be reviewed prior to any further studies are commissioned. Legal advice taken by Tegen Mor Fisheries Consultants Ltd suggests that any person pertaining to

be a fishermen's representative or officer of a fishermen's organisation should expect to be contacted in respect to issues that relate directly to the interests of those fishermen being represented by that person or organisation.

5.3.2 Access to financial information

Almost all of the companies within the sample had a turnover below the Company's House audit threshold of £10 million turnover. Small and micro companies make up most with less than 50 employees and a balance sheet below £5.1 million. For all these small companies only abridged accounts are available which give a balance sheet without any notes. No turnover or staff figures are available.

A commercial credit score is therefore used, this is based on all companies within a sector and evidence of company trading and trade practices. Three primary factors are identified for each business. A credit limit which is based on a company's published accounts and payment records and a contract limit which is that company's capacity calculated on estimates of turnover for the sector. Where the sector profile is small and only abridged accounts are available an estimated figure is used based on asset values and appropriate industry data.

All assumptions made on the destination (i.e. end markets) of fish and shellfish products landed within the FLAG area are based on a range of sector expert opinions, seafood businesses, trade bodies and publications (e.g. Globefish, Eufoma).

6. CATCHING SECTOR CAPACITY AND LANDINGS

6.1 FLEET SIZE

6.1.1 Number of vessels

There were 108 registered and licensed fishing vessels shown as on the MMO database shows within the study areas; of these 8 are over 10M in length and 100 are under 10M in length.

At 43 vessels the Weymouth fleet accounts for almost half of the fleet within the area. Towed gear vessels (i.e. trawlers or scallopers) make up less than 5% of the fleet by number. The under 10M fleet is a mix of low tonnage / high powered vessels, assumed to be predominantly line fishing boats for bass, and more traditional lower powered displacement vessels fishing using mixed static gear (i.e. nets and pots).

Fleet numbers show a relatively small decline over the past five years. This is probably due to an increase in restrictions on bass fishing.

Harbour	No. of vessels > 10m	No. of vessels < 10m
Beer / Axmouth	0	11
Lulworth	1	3
Lyme	2	12
Portland	1	15
Swanage	1	9
West Bay	0	10
Weymouth	3	40
Total	8	100

6.1.2 Employment

Based on employment multiples presented in research published by Seafarers UK earlier in 2018 it is estimated that the fleet employs around 174 fishermen (full time and part-time)

Due to the exposed nature and restricted tidal access of some of the smaller harbours and coves restricting the size of vessels that can be operated, part-time fishing is known to be a significant feature in the study area although no attempt has been to estimate the number.

6.2 FLEET LANDINGS

A total of 2631 tonnes worth £6.8M was landed through FLAG ports in 2017 although of this it is known that a significant proportion (c. 30%) of these landings were accounted for by visiting larger vessels (over 12M) landing catches at Weymouth due to its close proximity to fishing grounds.

Table 2: numbers of vessels by length (over or under 10m) in FLAG area

Species group	Landings (T)		Value (£k)	
Shellfish	2088	79%	4,436	65%
Demersal	181	7%	721	11%
Cephalopod	362	14%	1,623	24%
Total	2,631		6,780	

Table 3. table showing landings of species group by value and weight

Shellfish species include crab, lobster, scallop, spider crab and whelk. Cephalopods include squid and cuttlefish. Demersal fish include all other 'wet fish' species of which there are 30 different species recorded.

6.2.1 Value of landings (£)

The £3.7M worth of landings at Weymouth accounted for 57% of the total catch landed in the area. Lyme Regis landings represented 20% of the total and West Bay 10%.

There was little change in the value of landings in 2017 from 2016 although there was a slightly lower quantity landed showing that prices had increased.

6.2.2 Weight of landings (tonnes)

Figure 4 below shows Weymouth as a key landing port. Lyme Regis and West Bay are both significant and with Portland slightly less so; the remaining ports are small scale 'cottage industry' ports from value and quantity terms.

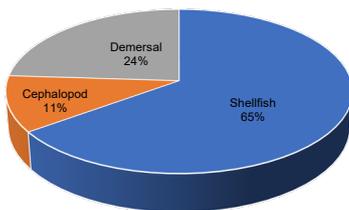


Fig 1. % landings by value & species type

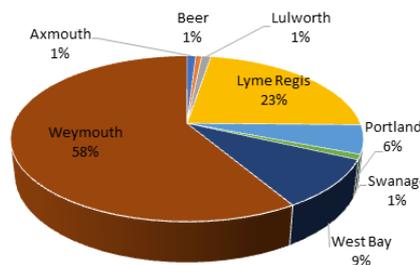


Figure 3. Showing value of landings by port in 2016 and 2017

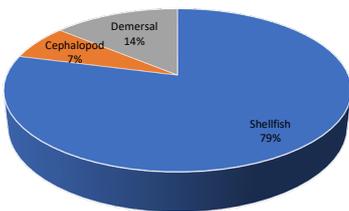


Fig 2. % landings by weight & species grp

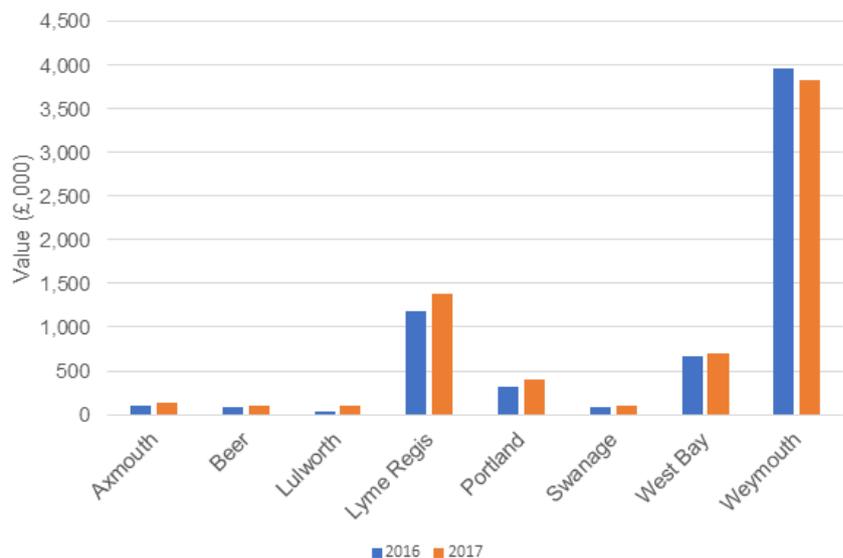


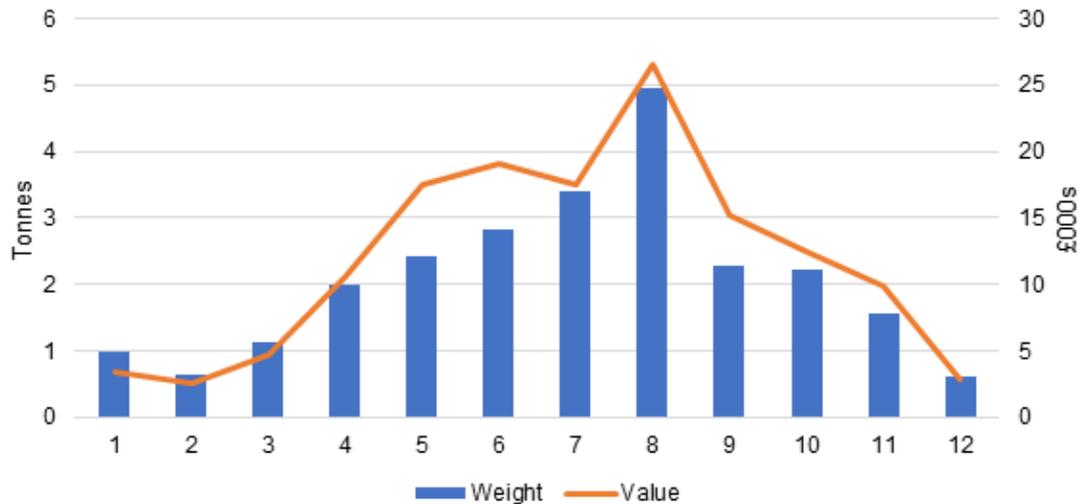
Figure 4. Showing landed weight of landings by port in 2017

6.3 PORT FLEET AND LANDINGS PROFILES

This summary provides a summary of total landings by weight and value by month for each port in the FLAG area.

AXMOUTH 6.3.1

Fig 5. Landings at Axmouth in 2017 by month

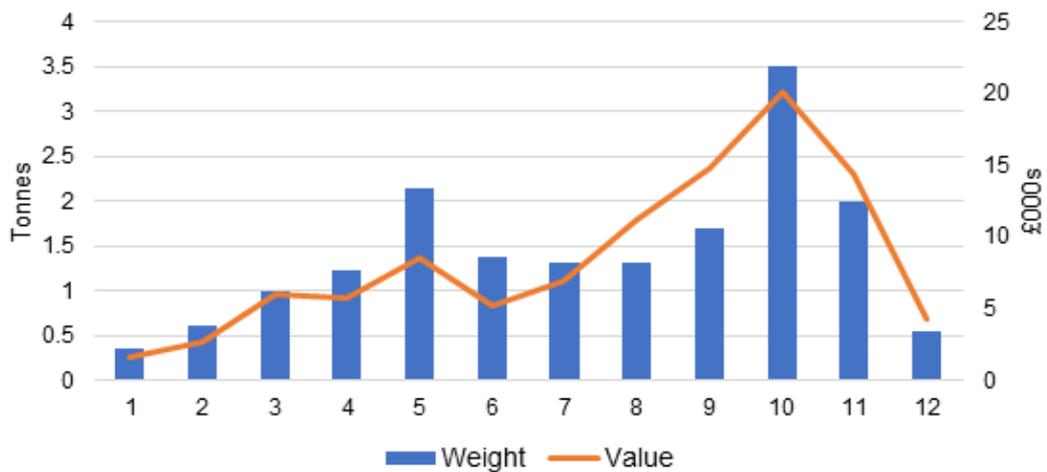


KEY FACTS

- Axmouth consists of a fleet of 7 registered fishing vessels.
- Top 4 species landed in 2017 were:
 - Pollack
 - Bass
 - Sole
 - Lobster
- These account for 75% of the total landed value of £142k
- There is a fresh fish shop nearby
- Wetfish was sold via the Reserve Seafood initiative but is now sent for auction at Plymouth
- Due to the exposed nature of the harbour and small vessel size less than 4 tonnes was landed between December and March

BEER 6.3.2

Fig 6. Landings at Beer in 2017 by month

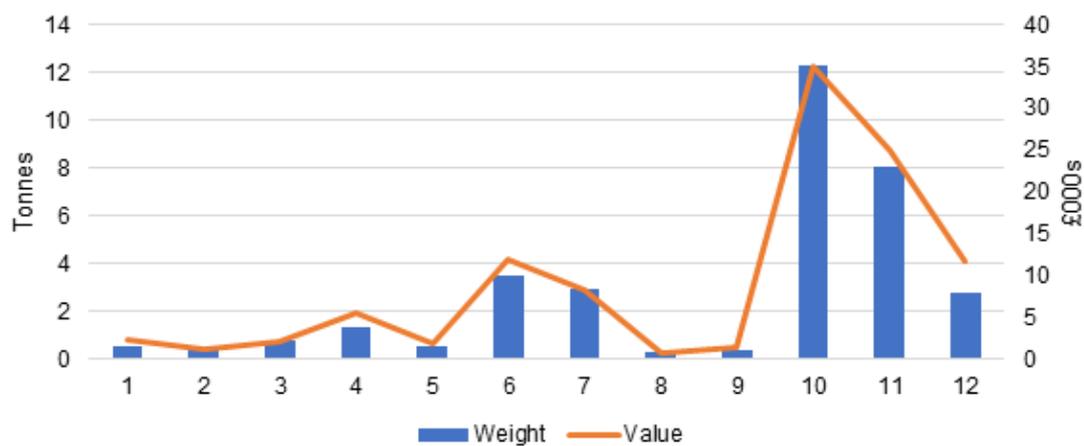


KEY FACTS

- Beer consists of a fleet of 4 registered fishing vessels.
- Top 3 species landed in 2017 were:
 - o Sole
 - o Lobster
 - o Crab
- Accounting for 77% of the total landed value of £101k
- There is a fresh fish shop adjacent to the beach that sells locally caught fish and shellfish
- Due to the exposed nature of the harbour beach fishing (and landings) are restricted by weather in winter

LULWORTH COVE 6.3.3

Fig 7. Landings at Lulworth Cove in 2017 by month

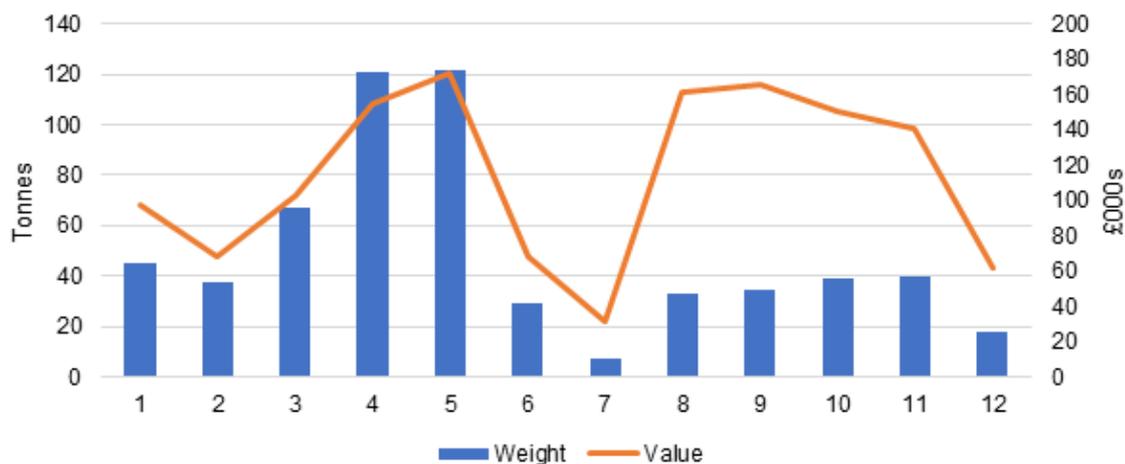


KEY FACTS

- Lulworth consists of a fleet of 3 registered fishing vessels.
- Top 3 species landed in 2017 were:
 - Scallops (74%)
 - Lobster
 - Crab
- Accounting for 90% of the total landed value of £107k
- Scallop diving is the main activity
- There is a family run fresh fish shop nearby though footfall at the harbour is low outside of the tourist season.
- Due to the exposed nature of the cove fishing (and landings) are restricted by weather in winter when boats move to Weymouth or are pulled up for Winter

LYME REGIS 6.3.4

Fig 8. Landings at Lyme Regis in 2017 by month

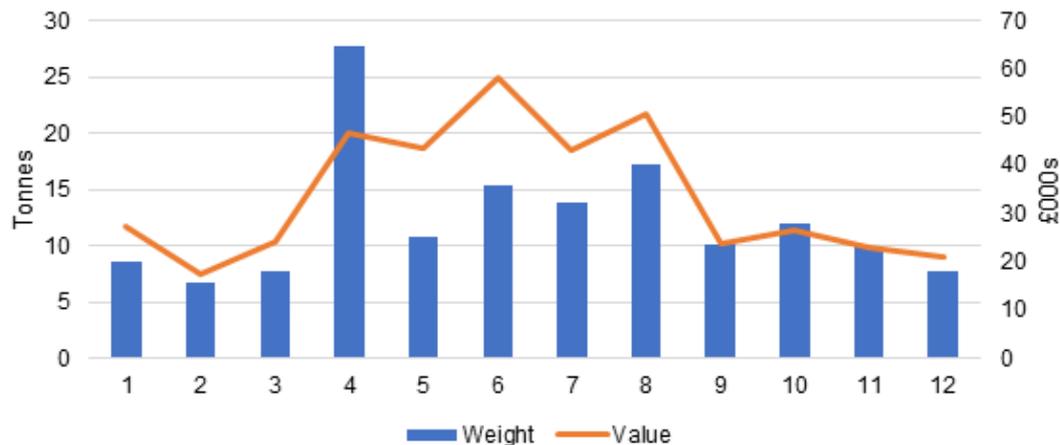


KEY FACTS

- The Lyme Regis fleet consists of 14 registered fishing vessels.
- Top 3 species landed in 2017 were:
 - Cuttlefish
 - Whelk
 - Sole
 - Squid
- Accounting for 65% of the total landed value of £1.4M
- There is a fresh fish shop adjacent to the beach that sells locally caught fish and shellfish
- The fleet is a mixture of static gear and mobile gear vessels
- Landings are seasonal with whelks accounting for most of the value of landing in Spring and the sole, cuttle and squid in the late Summer / Autumn
- Most wet fish is transported for auction at Plymouth and whelks are collected by the buyer

PORTLAND 6.3.5

Fig 9. Landings at Portland in 2017 by month

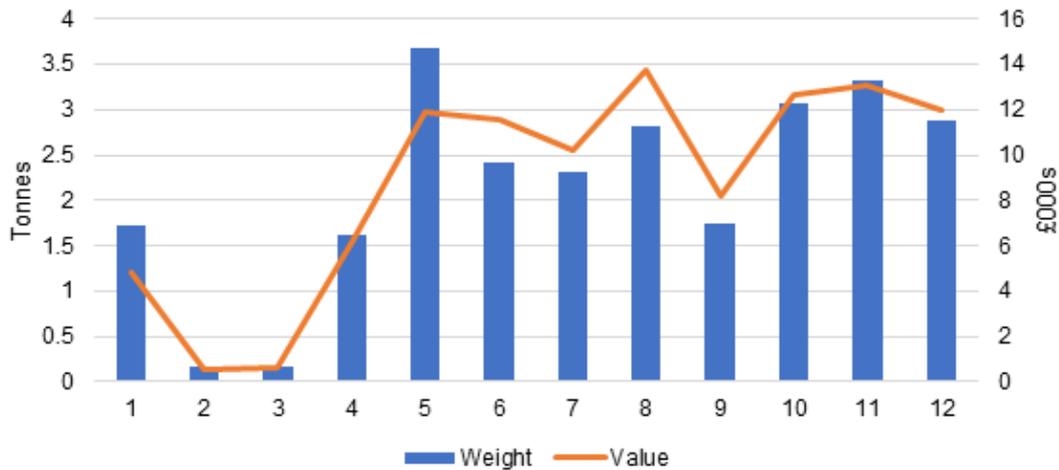


KEY FACTS

- The Portland fleet consists of 16 registered fishing vessels.
- Top 3 species landed in 2017 were:
 - Crab
 - Lobster
 - Bass
- Accounting for 95% of the total landed value of £406k
- The fleet is a mixture of static gear and rod & line bass boats
- Landings are seasonal with whelks accounting for most of the value of landing in Spring and the sole, cuttle and squid in the late Summer / Autumn
- Bass are mostly transported by road for auction at Brixham and much of the crab and lobster are sold to shellfish merchants / processors located nearby
- The largest shellfish processor in the FLAG region is located close to the marina area

SWANAGE 6.3.6

Fig 10. Landings at Swanage in 2017 by month

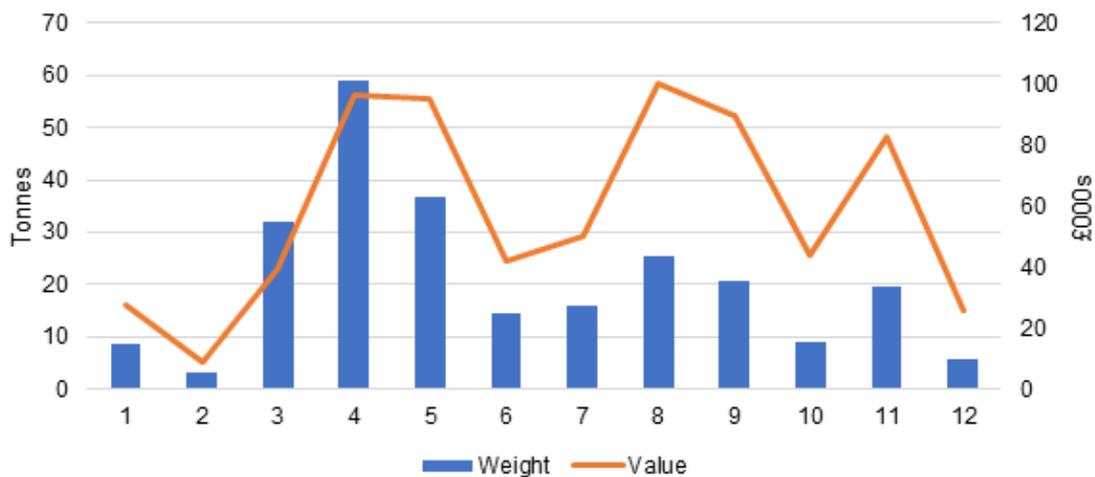


KEY FACTS

- The Swanage fleet consists of 10 registered fishing vessels.
- Top 2 species landed in 2017 were:
 - o Crab
 - o Lobster
- Accounting for 92% of the total landed value of £104k
- Potting is the main activity
- There is a successful family run fishing vessel / fresh fish shop nearby
- Due to the exposed nature of the moorings fishing (and landings) are restricted by weather in winter when boats re-locate to the more sheltered harbours of Weymouth or Poole

WEST BAY 6.3.7

Fig 11. Landings at West Bay in 2017 by month

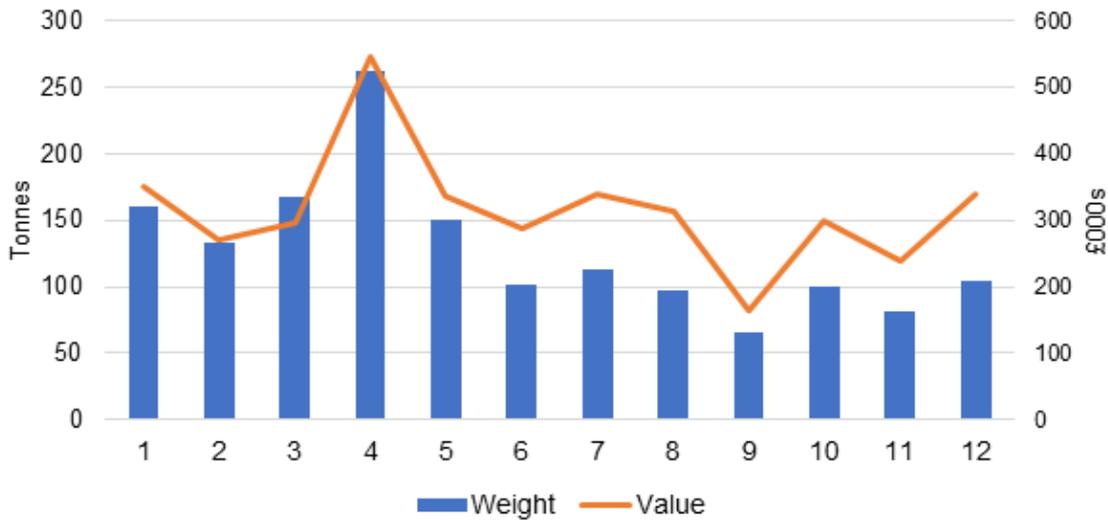


KEY FACTS

- West Bay consists of a fleet of 10 registered fishing vessels.
- Top 3 species landed in 2017 were:
 - Cuttlefish
 - Sole
 - Whelk
- These 3 species accounted for 60% of the value of
- The harbour has a busy fresh fish shop nearby
- Wetfish is sold locally or sent for auction at Plymouth or Brixham

WEYMOUTH 6.3.8

Fig 12. Landings at Weymouth in 2017 by month



KEY FACTS

- The Weymouth fleet consists of 43 registered fishing vessels.
- Top 3 species landed in 2017 were:
 - Crab
 - Lobster
 - Whelk
 - Bass
- Accounting for 95% of the total landed value of £3.8M
- 40% of landings by value are made by visiting vessels
- There is a fresh fish shop adjacent to the harbourside that sells locally caught fish and shellfish
- The fleet is a mixture of static gear and mobile gear vessels
- Landings are seasonal with whelks accounting for most of the value of landing in Spring and the sole, cuttle and squid in the late Summer / Autumn
- Some wet fish is sold via the quayside shop (the old fishmarket) which acts as a local sales agent whilst the rest is transported for auction at Brixham
- Shellfish such as whelks, crab and scallops are collected by the buyer

6.4 Sector summary

Along with price understanding the seasonal availability of landings is central to building an understanding of potential opportunities to develop markets for locally landed fish and shellfish.

Landings of crab are the most consistent with a minimum of around 50 tonnes of crab landed every month of the year; the low in March coinciding with winter storms and low water temperature.

Lobster and whelk landings also appear directly related to water temperature. In the case of lobster, the relationship is positive with warmer water resulting in greater landings as the shellfish feed more voraciously. The opposite is true of whelks which appear to be most prolific feeders in colder seawater temperatures.

April sees the highest value of landings as the lobster fishery gets underway and scallop landings peak as the weather also improves allowing more of the smaller vessels to get to sea. The value of cuttlefish and bass landings peak in August though both are virtually from absent from landings throughout February and March.

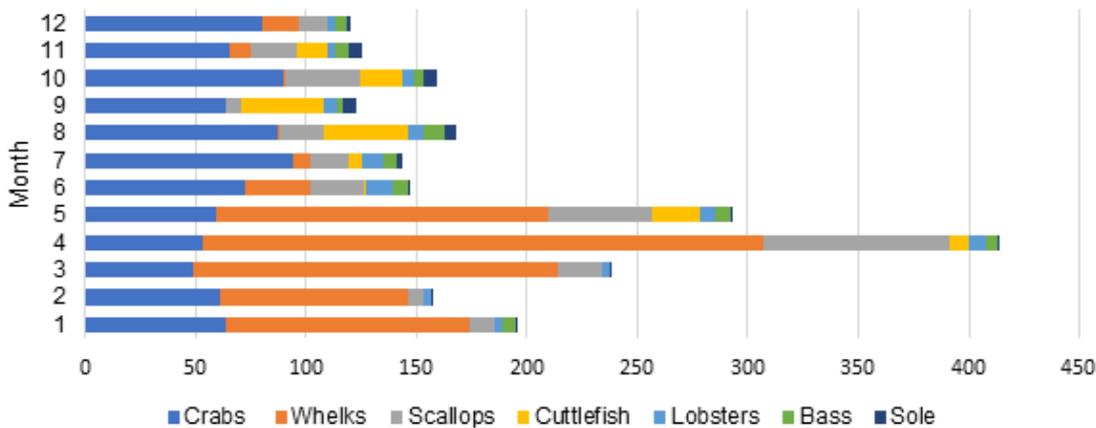


Fig 13. seasonality of landing by weight (tonnes)

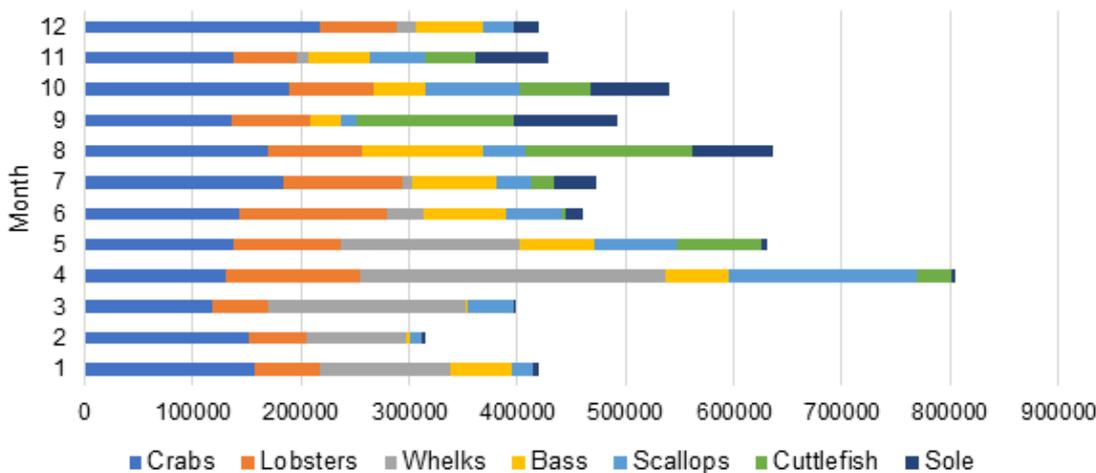
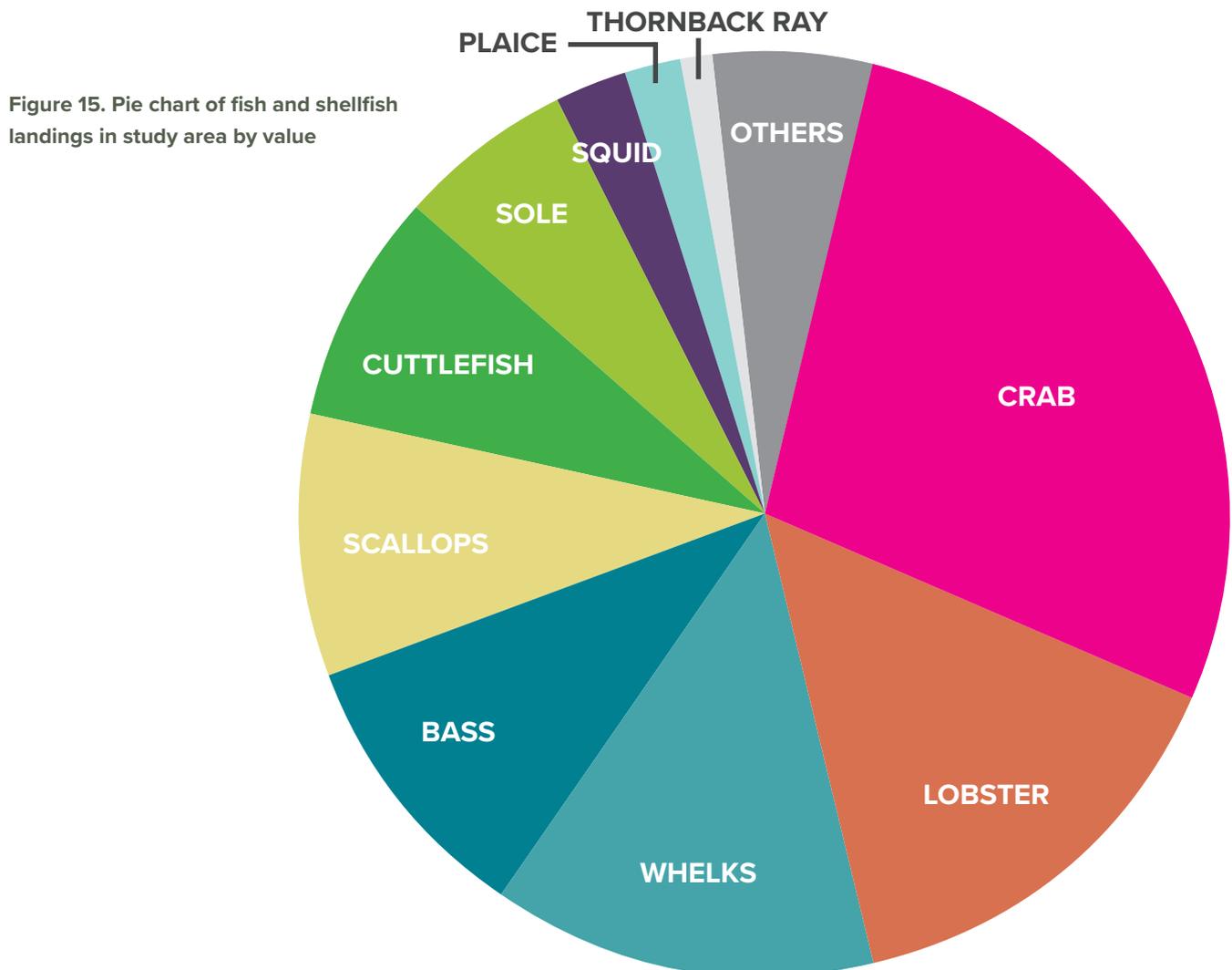


Fig 14. Seasonality of landing by value (£)

7. SUSTAINABILITY AND MARKETS FOR MAIN SPECIES

The top 5 species landed (by value) in the study area are shellfish species and as such no formal stock assessment is undertaken by International Council for the Exploration of the Seas (ICES) on an International scale.



7.1 CRAB (CANCER PAGURUS)

At £1.9M the 840 tonnes of brown crab (*Cancer pagurus*) landed in the study area in 2017 make it the most significant part of the catch by value and tonnage. Crab are landed at all ports within the study, but Weymouth is by far the most significant with landings there accounting for 80% of the total within the area. Of the crab landed at Weymouth in 2016 70% was landed by visiting vessels and can be assumed to be landed direct to vivier lorries (i.e. equipped with sweater tanks for the transport of live shellfish) and sold outside of the study area.

7.1.1 Landings (seasonality and price)

In keeping with crab fisheries across the South West of England crab landings peak in autumn and then decline through the winter months as sea temperatures fall causing the crabs to have a lower metabolic rate, becoming less active and requiring less energy (i.e. food).

Price is broadly inversely proportional to landings and shows a seasonal high in the run up to Christmas which has been a long-term feature of crab prices across the UK. Crab prices have been more stable and remained at a higher level since the emergence of the Chinese market around 10yrs ago (see below).

7.1.2 Key markets

For many years the main market for brown crab was for live export to France and Spain. In more recent years as demand for crab meat in the UK has grown so has the processing of crab – through boiling and the picking – increased to meet the demand. Around 10yrs ago the export of whole crab (live or cooked and then frozen) emerged as a lucrative market with almost



Figure 16. Showing seasonality of crab landings (tonnes) and price (£/kg)

insatiable demand. The result has been increased stability in crab prices in line with greater demand. Over the past 2yrs crab prices have increased as crabs have appeared to be scarcer in some areas.

7.1.3 Sustainability

There is no formal stock assessment of brown crab undertaken by ICES. The fishery is currently part of a 5yr Fisheries Improvement Plan (FIP) developed and delivered by the MSC Project UK. The result of this process should be full MSC certification of this fishery.

There are concerns from fishermen that in the absence of management measures such as pot limits or quotas that the effort on crab fishing has increased and

hence that landings could mask a drop in catch per effort (e.g. kg crab per pot) which could indicate that the stock is being harvested unsustainably.

7.1.4 Opportunity for market development

Given the continued strong demand for crab both from the Continent and China and the existing crab processing businesses within the FLAG area there appears to be little scope for further ‘value added’ processing in the brown crab sector. The fishery within the FLAG area is already part of MSC Project UK and when the fishery completes the Fisheries Improvement Plan (FIP) in 2021 the fishery should be MSC accredited. This should facilitate greater market access to UK retailers.

7.2 LOBSTER (HOMARUS GAMMURUS)

The rocky reefs, jagged coastline and strong tides make the area perfect habitat for lobster. At £1M the 70 tonnes of lobster landed in the study in area in 2017 represents 15% of the total catch by value. Lobster are landed at all ports within the study area but Weymouth is by far the most significant with landings there accounting for 63% of the total lobster landed within the area.

7.2.1 Landings (seasonality and price)

7.2.2 Key markets

While small quantities of lobster are sold to the UK food service sector the main market is in Europe, particularly France, Spain and Italy.

France is the major market for lobster in Europe and the main hub for lobster distribution to other European countries. French lobster imports from the UK have been relatively stable at around 1400 to 1600 tonnes in the past six years.

Spain is the world's sixth major importer of lobster but the economic crisis of recent years had its impact on the Spanish lobster trade; in 2014, it imported 6,200 tonnes compared to 8,000 tonnes in 2009.

The species has limited potential to enter the retail market as imported Canadian lobster is already sold by UK retailers at a lower price than the 1st sale price currently received by local fishermen.



Figure 17. Showing seasonality of lobster landings (tonnes) and price (£/kg)

7.2.3 Sustainability

The local lobster stocks appear to be stable or possibly increasing (pers comm. SIFCA). The SIFCA byelaw protects inshore grounds from larger vessels >12m so as long as effort remains at existing levels the sustainability of the species looks strong.

Nationally measures such as a ban on the landing of berried (egg carrying) females and an increase in Minimum Landing Size (MLS) both appear to have helped boost stocks.

7.2.4 Opportunity for market development

The lobster fishery in South West England is currently being considered under MSC Project UK. Demand for lobster at present is high due to a decrease in lobster landings from the competing North West Atlantic American and Canadian fisheries. However, should this trend reverse the market for European lobster would come under pressure from cheaper imports. In this event MSC certification could be a means to secure or enhance market access and provide an independent assessment of the fishery's management.

7.3 SCALLOP (PECTEN MAXIMUS)

Landings of scallops represent 9% of the total catch value landed. The region has a number of scallop divers operating from ports such as Lulworth cove. Lyme Regis and Weymouth between them have five under 12m scallop dredging vessels and represent the main ports for scallop landings in the area.

7.3.1 Landings (seasonality and price)

7.3.2 Key markets

Although the UK retail market for scallops is limited, demand for scallops from the foodservice sector has increased in recent years. However, the main retail and foodservice markets remain in France and Italy.

Scallops are usually processed in the UK, either fully shucked or as half shell and the sold fresh or Individual Quick Frozen (IQF), prior to export. At least two businesses in the FLAG area already specialise in this processing activity.

7.3.3 Sustainability

Due to the high levels of seabed protection afforded by European and UK site designations and restrictions on the size of vessels that can fish within 6 nautical miles of the coast scallops are possibly the most protected within any English IFCA area. For this reason the Dorset / East Devon coast is the main source of diver-caught scallops in the UK.

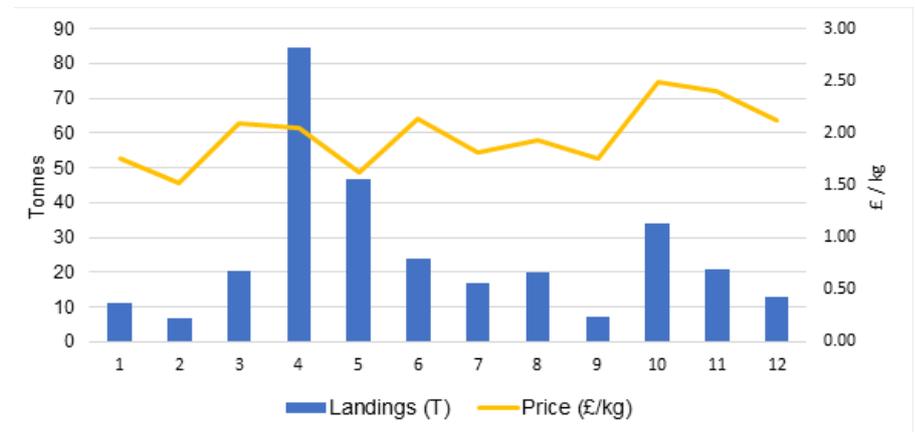


Figure 18. Showing seasonality of scallop landings (tonnes) and price (£/kg)

Stock assessment data on scallop stocks is limited but it is likely that the local scallop stocks are amongst some of the best protected in the UK. More widely, at English waters level, Cefas and the scallop sector are working collaboratively on addressing the data deficiency and working towards a formal stock assessment. This will support both better management of the fishery and be an important step towards achieving MSC certification of the fishery.

6.3.4 Opportunity for market development

The scallop dredge fishery within the FLAG area is limited due to the large areas that are prohibited to dredging. However, there does seem to be the opportunity for 'hand dived scallops from Dorset'. But, as market demand already significantly outstrips supply it is unlikely that marketing around the provenance would add any further value and could create false expectation in the marketplace.

7.4 WHELK (BUCCINUM UNDATUM)

Landings of whelks were worth £0.9M (at first sale) in 2017 and accounted for 13% of the total catch value in the FLAG area. Approximately 25% of this was landed by larger visiting vessels landing catches at Weymouth.

7.4.1 Landings (seasonality and price)

7.4.2 Key markets

The main market for whelks is in Asia (particularly Korea) where thinly sliced whelk is considered a delicacy served in bars as snacks. The market is quite volatile as after a boom in demand / prices in the late 1990s early 2000s prices slipped to £300-£450/tonne. In recent years demand and price have surged strongly with prices regularly reaching £800-£1000/tonne.

Whelk processing is specialised and requires significant investment in processing equipment that includes pre-cook, washing and grading systems, cooking units, crushing units, cyclone meat separation, shell meat separation and blast freezing. The main whelk processors in the UK are based in N Devon, Fleetwood (Lancs.) and NE Scotland.

7.4.3 Sustainability

There is no formal stock assessment for whelk. Both IFCA's record landings and effort levels and whilst there is no hard evidence of decline there is

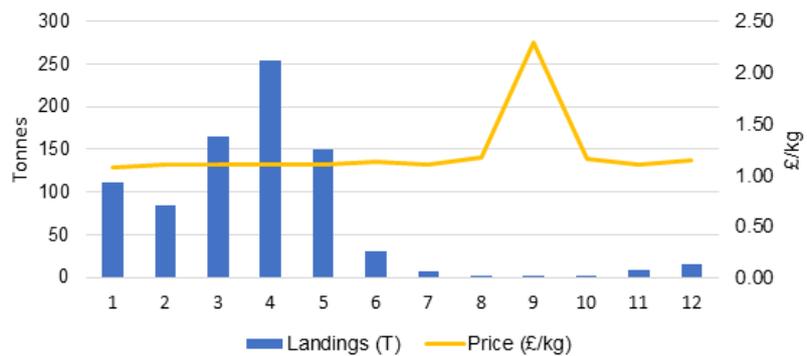


Figure 19. Showing seasonality of whelk landings (tonnes) and price (£/kg)

concern that the fishery could be susceptible to over exploitation.

There was strong support from large processors and fisheries managers for increased scientific assessment of whelk stocks to identify maximum fishing limits and to ensure the fishery is managed within these to ensure it is sustainable.

7.4.4 Opportunity for market development

Given the significant cost of setting up a whelk processing line and the expertise required to develop specialist overseas market the establishment of a new export business appears to be high cost and high risk.

While there appears to be limited opportunities to develop UK markets for whelks, recognition of MSC is growing globally and therefore there could be a medium / long term opportunity to seek MSC certification of this fishery. As well as potentially providing preferential market access the process of certifying the fishery would provide a catalyst to improving the science and management of the fishery.

7.5 BASS (DICENTRARCHUS LABRAX)

In 2016 Weymouth recorded bass landings of 50 tonnes worth £562k making it Weymouth the 2nd largest bass landing port in England. Weymouth has had a strong rod and line bass fishery for around 12 years but in recent years catches and landings have declined due to the introduction of quota restrictions aimed at improving bass stocks. Bass are now subject to an EU led stock recovery plan as ICES advice concludes that the stock is in serious decline and needs maximum protection and minimum fishing in order to reverse the current downward trend. A further quota reduction in 2019 is therefore likely to impact on landings from the fishery and threaten the economic viability of some of the larger vessels engaged in the fishery. Bass fishing also provides a significant attraction for Weymouth's charter angling vessels which is the largest charter angling fleet in Europe.

7.5.1 Landings (seasonality and price)

7.5.2 Key markets

The rapid increase in farmed bass (and bream) production in Greece and Turkey over the past 15yrs has led to a dramatic change in the market for bass. As was seen with salmon a generation earlier, bass was once the preserve of top end retail and fine dining is now available to the masses with supermarkets often promoting two fish for £5. Farmed bass dominates UK retail with wild fish, at four or five times the price, the reserve of specialist fishmongers and restaurateurs.

Despite being listed on the Marine Conservation Society (MCS) 'fish to avoid' list, with much of the bass landed being 'line caught' and lower volumes being landed due to quota limits demand far outstrips supply. Almost all is sold to top end UK restaurants either whole or scaled, filleted and portioned.

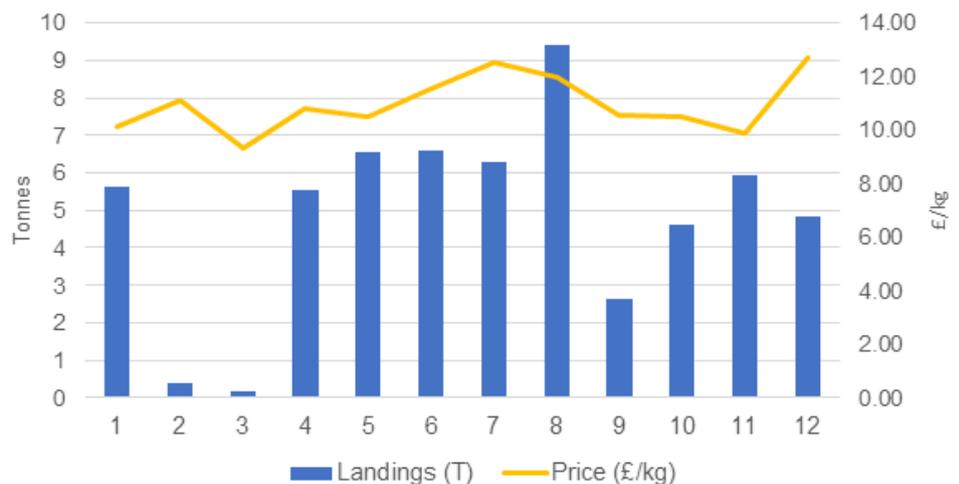


Figure 20. Showing seasonality of bass landings (tonnes) and price (£/kg)

Although some are sold to local fish merchants / processors and smaller amounts direct to restaurants the main route to market is mostly via fish auctions at Plymouth and Brixham.

7.5.3 Sustainability

Fig 21 provides a summary of ICES scientific advice on bass and will be used by Ministers and officials across Member

States when the 2019 quotes are considered at the December Fisheries Council.

Spawning Stock Biomass (SSB, the estimated weight of the breeding population) and Recruitment (R, the number of 1yr old fish joining the population) remain low and will give fisheries managers no option other than to continue a long-term stock recovery plan for bass.

7.5.4 Opportunity for market development

Given the shortage of supply due to stringent quota and weak stock assessment at this time there appears to be little justification for seeking opportunities to develop the market for wild caught bass.

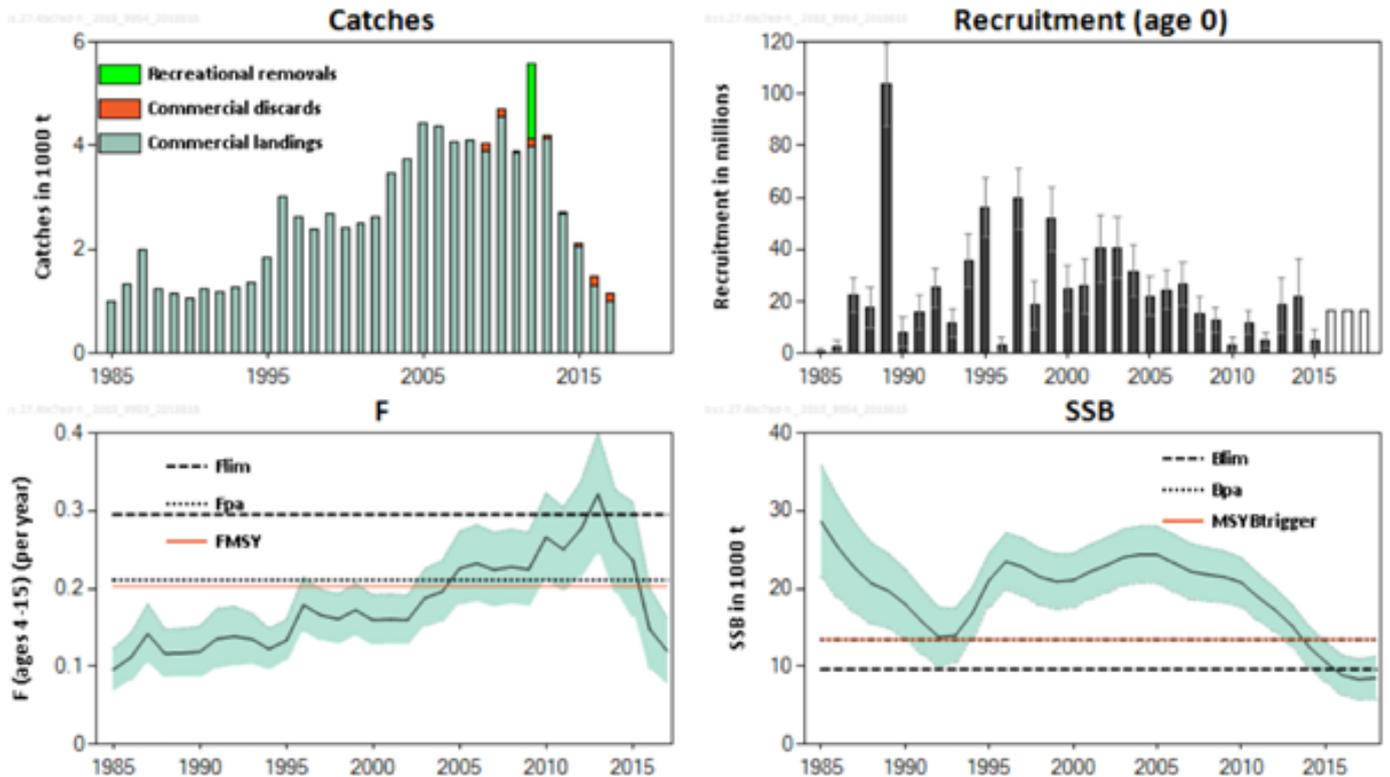


Fig 21. Summary ICES advice on seabass (Reproduced from ICES)

7.6 DOVER SOLE (SOLEA SOLEA)

The 30 tonnes of sole landed in the study area in 2017 represents 6% of the total catch value landed. The sole fishery is seasonal with most of landings being made in late Summer / early autumn. The most significant landings are made at West Bay and Lyme Regis where the majority of the catches are made using gill or trammel nets where there is a small by-catch of plaice. Dover sole stocks are believed to be faring much better as the stock has recovered well from a low point in 2004 when a stock recovery plan was introduced.

7.6.1 Landings (seasonality and price)

7.6.2 Key markets

As with wild bass, the sole is the reserve of top end retail and fine dining. Much is therefore sold fresh, whole and skinned to the UK foodservice sector via SW auctions and local merchants / processors. Smaller size sole tend to be exported to Holland and France, where the demand (and price) is higher for this size of fish.

7.6.3 Sustainability

Scientific advice on the sole stock in Western English Channel (i.e. ICES area VIIe) provided by ICES (see fig 23) suggests that the stock Spawning Stock Biomass (SSB, the estimated weight of the breeding population) to be at a 25yr high and fishing mortality (a measure of fishing pressure) to be at a 30yr low. As a result the stock is considered stable or increasing.

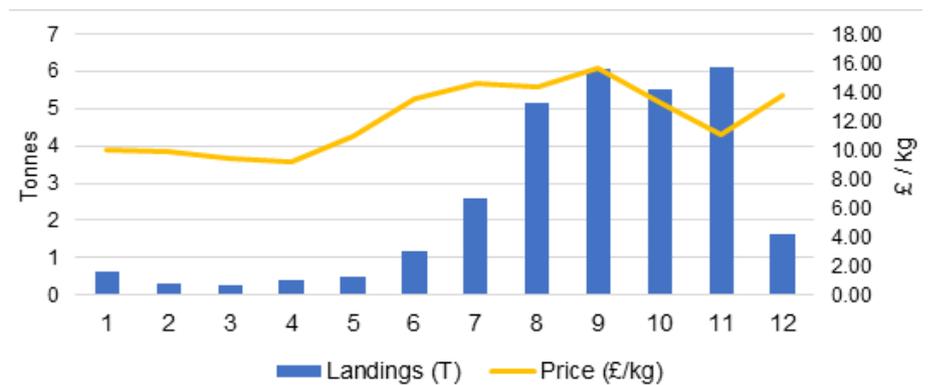


Figure 22. Showing seasonality of sole landings (tonnes) and price (£/kg)

7.6.4 Opportunity for market development

The fishery appears to well managed and the stock stable or increasing so it could be considered as a candidate for MSC certification. At present the only MSC certified sole fishery in the UK is the Hastings inshore sole fishery. These sole are typically of a smaller size than is demanded in the UK market and consequently much of what is landed from the fishery is believed to be exported (particularly to Boulogne sur mer). Therefore, there could be a market place

in the UK but given the already strong price and relatively small scale of the fishery it may be hard to justify the cost:benefit of a certification that would likely cost £50k

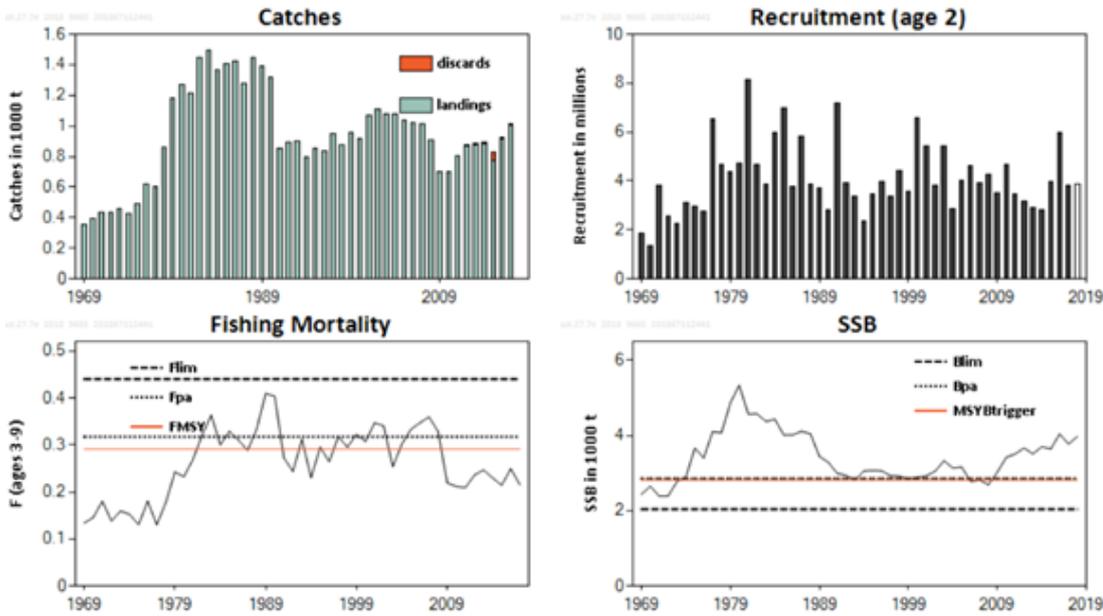


Fig 23. Summary ICES advice on dover sole

(Reproduced from ICES)

7.7. SUMMARY

Species	MCS score	MSC	ICES	Comments
Crab	2	Part of Project UK Fisheries Improvement Plan (FIP). Poss certified by 2021	Not assessed	
Lobster	3	Part of Project UK Fisheries Improvement Plan (FIP). Poss certified by 2021	Not assessed	
Whelk	5	Assessed under Project Inshore	Not assessed	On MCS fish to avoid list
Scallop	2/3	Part of Project UK Fisheries Improvement Plan (FIP). Poss certified by 2021	Not assessed	
Bass	5	Assessed under Project Inshore	Recovery plan in place as stock deemed overfished	On MCS fish to avoid list
Sole	2	Assessed under Project Inshore	Stock at or above MSY	Could progress to full MSC assessment

Table 4. Provides a sustainability scoring summary of key species landed in the area

NB. The Marine Conservation Society fishonline (<https://www.mcsuk.org/goodfishguide/>) sustainability scoring consider the robustness of the fisheries management in place, the health of the stock and the impact the fishing gear has on the wider marine environment.

8. SEAFOOD PROCESSING AND RETAILING IN THE STUDY AREA

8.1 PROCESSING SECTOR

8.1.1 National overview

The most recent dataset available from Seafish reports that in 2016 there were 376 fish processing units in the UK providing a total of 17,999 full-time equivalent (FTE) jobs. In 2016 there were 307 sea fish processing units in the UK, providing a total of 13,554 FTE jobs. Between 2014 and 2016 the number of sea fish processors declined by 8% and the number of FTE jobs rose by 1%.

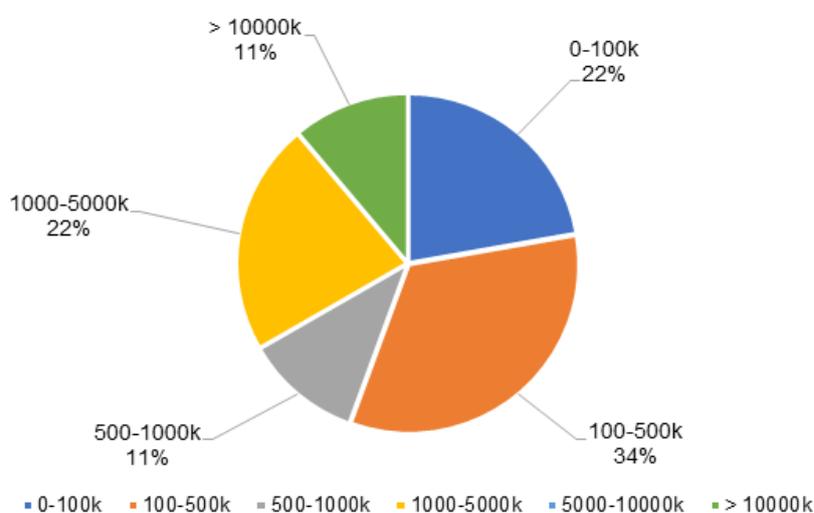


Fig 24. Chart showing breakdown of processors by estimated turnover

8.1.2 Processing in Dorset & East Devon

The processing sector within the FLAG consists of 12 businesses (4% of national) that broadly fall into one of the following for main product areas

- i. Value added (picked) crab
- ii. Value added (shucked) scallops
- iii. Live crab
- iv. Smoked fish
- v. Multi-species range for foodservice / catering trade
- vi. Wholesale to UK
- vii. Wholesale to EU

Geographically the processors are clustered around the Weymouth and Portland area as this provides access to the most consistent landings of commercial quantities.

8.1.3 Sourcing raw materials

The flow of products in and out of the region is very difficult to quantify precisely but interviews with businesses in the sector suggest that around 90% of the shellfish processed within the area is locally sourced.

In contrast, although some wetfish was sourced from local boats there was recognition that local landings could not meet the local demand from processors. The bulk of raw materials therefore being sourced from the fish auctions of Plymouth, Brixham and to a lesser

extent Newlyn. Unless done at scale this can add a significant cost to products.

8.1.4 Economic performance

The turnover within the local processing sector ranged from £11m to £10k with an average £86k. Credit scores within the sector were similar to the national average for seafood businesses.

8.1.5 Employment

Using a mix of interview data and established economic employment proxies it was estimated that the processing sector employs 110 FTE across the study area. Employment ranged from 48 to 1. The average was 9. As has been reported nationally by Seafish, recruitment / access to labour – particularly post-Brexit, was seen as a concern.

8.1.6 Sector opportunities

Shellfish processors reported that profit margins on crab had been squeezed by increasing raw material costs due to the Chinese demand for whole crabs.

While businesses recognised the strength of regional brands such as Seafood Cornwall, given the high percentage of ‘wet / demersal’ fish imported into the area for processing it is hard to envisage a regional provenance claim working in the processing sector although this may add value with local independent retail shops and farmers’ markets.

Only one business that sold into UK retail recognised the value that MSC certification could add to local fisheries.

Brexit remains the greatest uncertainty and was a concern

to those exporting significant quantities of fish and shellfish into the EU who were concerned that additional border checks could eat into valuable product shelf-life (and therefore value).

8.2 RETAIL SECTOR

8.2.1 National overview

Over the past 10 years, total seafood - the sum of chilled, frozen and ambient seafood sectors, continues the long-term pattern of price driven growth; with seafood consumption continuing to decline and average price increasing.

Salmon continues to dominate total seafood with a 33% value share of the top ten species, selling over twice the amount of cod, its nearest competitor, by value. However, the shoppers’ long term love of salmon may be coming to an end, as salmon volume fell over both the long and short term. Shoppers are instead choosing other farmed species such as warm water prawns, basa,



Fig 25. Image shows a typical UK supermarket fish counter showing dominance of salmon and smoked fish

seabass and sea bream. Traditional species have also recently begun to regain popularity with shoppers: with cod, haddock, cold water prawns and 'mixed seafood' returning to volume growth.

Over the short term (12 months to June 2018), the total value of salmon sold in the UK was worth £1.06bn, (+8.3%) with 61,658 tonnes (+2.4%) which recently displaced tuna as the second most popular species with 15% value share; followed closely by tuna (12%), warm water prawns (10%) and haddock (8%). None of these species are caught or sold in commercial quantities from the FLAG study area.

By volume, the top three species are: salmon, tuna and cod respectively accounting for 19%, 19% and 18% of sale volume share with each take a similar share of the top ten species combined. Total cod, warm water prawns, haddock, mixed seafood, pollock, seabass and basa were the main species in full growth. Cold water prawns and unspecified 'other' seafood were in full decline (+3.6%), with 62,190 tonnes (-8.5%). Smoked salmon makes up 32% of total chilled salmon sales by value.

8.2.2 Seafood retail sector businesses in the study area

The retail sector within the FLAG consists of 9 fishmonger businesses. All businesses are micro scale (less than 4 employees) and are typically owner-operators. Two of the businesses were vertically integrated family fishing businesses.

Outside of this there are believed

to be at least a further 2 or 3 transient traders at local markets / farmers markets but these maybe sole traders operating under the VAT reporting threshold.

8.2.3 Sourcing raw materials

In keeping with national retailers, there is a reliance on imports to provide the range of fish and shellfish species expected by consumers. In many cases fish and shellfish are sourced locally where possible but to offer the full range of species and year-round availability the majority of fish is sourced from wholesalers.

8.2.4 Economic performance

The total estimated turnover for the whole local retail sector was c. £700k. Estimated turnovers of individual business ranged from £400k to < £10k with an average £86k. Credit scores within the sector were similar to the national average for seafood businesses.

8.2.5 Employment

Using a mix of survey data and established economic employment proxies it was estimated that the processing sector employs 12 fte across the study area. Employment ranged from 4 to 1. The average was 1.

8.2.6 Sector opportunities

The opportunity to improve the market share of seafood landed in the study area looks limited by UK consumer tastes and sporadic availability. Attempting to persuade UK consumers to

become more adventurous and eat more of the fish caught the UK is a long-term challenge and unlikely to be greatly impacted by the actions of an individual FLAG. However, independent retailers can be much more flexible and dynamic in both ranging and pricing and can therefore capitalise in peak availabilities and low prices creating 'offers' for customers.

Studies by Seafish in the past have shown that consumers will 'buy local' or 'buy British' where labelled and so the retail sector (both multiple and independent) could benefit from generic Seafood from Dorset / Seafood from Devon branding or product information either at point of sale (PoS) or online although the quantity / range of species would be limited.

Nationally, multiple retailers such as Tesco, Waitrose, M&S and Sainsburys are all strong advocates of Marine Stewardship Council (MSC) accredited fisheries and have listed hitherto un-listed species once these have become MSC listed. The best examples of this are Cornish Sardines and Cornish Hake which have seen significant penetration in the UK retail market post MSC certification, creating greater demand as a minimum and in the case of hake a better price too. The certification of fisheries within the area to the MSC standard may also provide some benefit to local retailers.

9. SWOT ANALYSIS AND RISK ASSESSMENT

Strengths

- Strong habitat protection measures
- Seafood ambassadors and touristic experience
- Strong 'dayboat' fleet quality potential
- Diverse range of species
- Provenance for line caught bass and dive caught scallop scallops
- Strong fisheries management regime
- Port facilities are mostly in keeping with best practice with ports of similar size and scale elsewhere in the UK

Weaknesses

- Highly seasonal landings
- Shellfish dominate
- End market of majority of fish / shellfish landed in FLAG area is export
- Little strategic dialogue between supply chain sectors
- High dependence on export markets
- Continuity of supply heavily dependent on weather
- Distance from main auction markets

Opportunities

- Gaining greater independent recognition for sustainability credentials of some key species e.g. sole and lobster
- Regional branding
- Greater cross supply chain dialogue and Creating greater awareness of local 'pot to plate' producers
- Providing opportunities for catchers to sell direct to public

Threats

- Volatility in Asian whelk market has been seen in the past
- Impacts of Brexit are still unknown and hard to predict
- Sustainability of data-deficient stocks is unknown
- Access to labour in the processing sector post Brexit

10. SUPPLY CHAIN INITIATIVES FROM OTHER SEAFOOD REGIONS OR FLAG AREAS

This section draws on experience from supply chain initiatives other FLAG areas and Seafood studies in the UK (and beyond) and applies this to the Dorset and East Devon FLAG area in order to identify opportunities to create economic growth for supply chain stakeholders.

10.1 Shellfish co-operatives

In other parts of the country where shellfish landings are significant, such as Whitby and Bridlington, fishermen have formed co-operatives to store their lobster catches on land in tanks to exert greater control on the market in order to achieve a better price. In Bridlington the largest co-operative has 22 vessels landing to it and is seen as a great success by the co-op members by providing top prices for lobster sales. The scale of this operation supports three full time employees to ensure the animals are correctly stored and marketed.

In Whitby shellfish storage tanks were built with the assistance of EU funds and the local development agency (Yorkshire Forward) but unlike Bridlington this project has not benefitted fishermen due to technical issues from the start and a different management structure. As a result of strong market demand and the significant investment required to build and manage onshore storage tanks there was little appetite amongst local fishermen to develop a similar onshore live shellfish storage facility at Weymouth.

10.2 Community Supported Fisheries

A community-supported fishery (CSF) is an alternative business model for selling fresh, locally sourced seafood. First seen in the US over ten years ago, CSFs in the UK fisheries sector are in their infancy, being modeled on popular community-supported agriculture programmes (e.g. vegetable box schemes), offering members weekly shares of fresh seafood for a pre-paid membership fee. Community supported fisheries aimed to promote a positive relationship between fishermen, consumers, and the ocean by providing high-quality, locally caught seafood to

members. Examples in the UK included Catchbox and Soleshare.

CSFs operate differently to most businesses. Consumers are expected to pay in advance for a “share” of seafood, to be delivered weekly to guarantee fishermen a consistent market for their catch each month.

Development of this scenario explored whether a CSF could be viable in the Dorset FLAG area. A small processing unit would be required with 2-4 staff. The processing aspect was not challenging but the marketing, delivery and administration involved all appeared time consuming and therefore costly. After considering local demographics and the existence of other fisher-family retail businesses the project team did not feel that there would be sufficient demand within the local community area to support such a scheme. Furthermore, a new CSF could leach customers away from

existing retailers and hence create displacement rather than new business.

10.3 Adding value to fisheries locally

Within the FLAG area the cooking and picking of crab offers the most significant opportunity to add value. A number of the processors and some smaller scale fisher family businesses are already active and apparently successful in this area.

Value added processing is usually labour intensive and the opportunity to add value to products comes at the cost of increased staff costs. To ensure staff are fully utilised a continuous supply of raw materials is required. For this reason the main hub of seafood value added processing in the UK is in Grimsby as it has ready access to steady imports of cod and haddock from Iceland and Norway.

With the need for continuous supply of raw materials for value added processing in mind beyond crab it appears that the local catching sector does not have sufficient volume, diversity or continuity of landings to support fish/shellfish processing activities at significant scale. However, there maybe limited scope for ‘cottage industry’ scale value adding, such as the product of fish pies or dressed lobster. Such activities could be carried out in a domestic kitchen (subject to sign off by a local environmental health officer).

10.4 Regional Seafood brands

In the 2000s Seafish worked with local seafood stakeholders (catchers, POs, auctioneers, harbour managers, wholesalers and processors) in Scotland, Northern Ireland, Humber and Cornwall to create regional seafood groups (i.e. Seafood Scotland, Northern Ireland

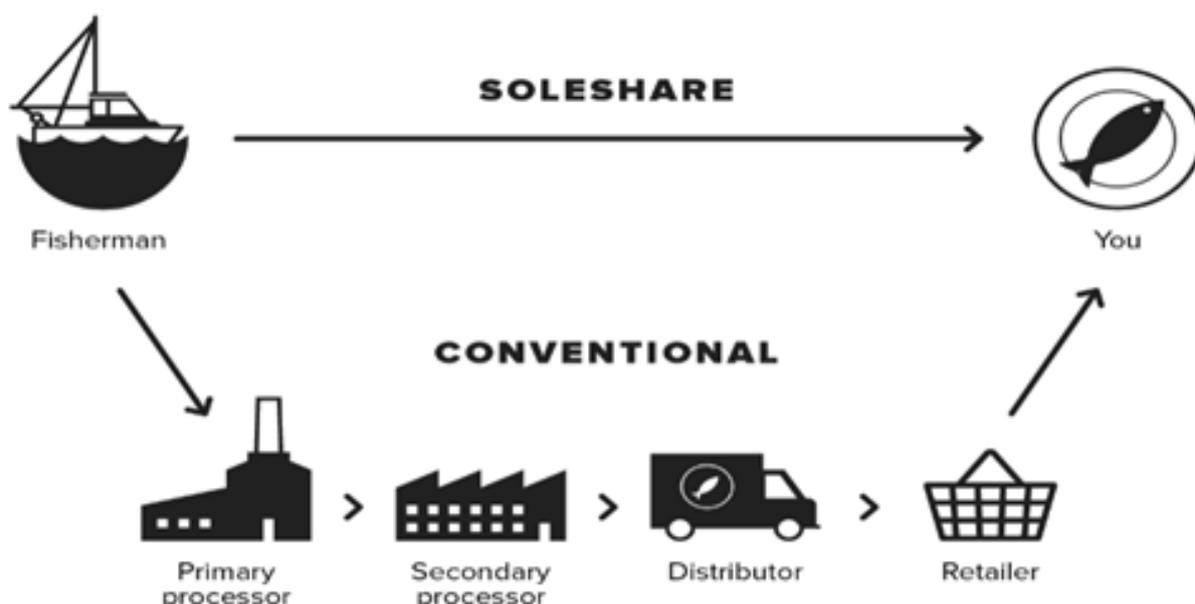


Fig 26. Infographic showing supply route of Community Supported Fisheries (CSFs)

Seafood, Humber Seafood group and Seafood Cornwall).

With the assistance of EU funds these groups provided a vehicle for the marketing and promotion of seafood from a geographical region. In addition, these groups provided a forum for dialogue between different actors in the supply chain and provided a greater understanding on the challenges facing each sector of the industry.

The regional seafood groups were also used to host trade missions to different countries and provide a steering group for MSC certification or Protected Designation of Origin (PDO) status of local fisheries e.g. Cornish sardines.

In the late 2000s Dorset Wildlife Trust ran a 'Great Dorset Seafood' campaign which was primarily a consumer facing campaign to highlight the diversity of sustainable seafood available from the shores of Dorset. The Trust remains proactive in its work with fishermen in Poole and indicated that it would wish to be involved in any future discussions around resurrecting regional seafood promotion activities.

10.5 Electronic fish auction

Over 90% of landings in the area accounted for by seven species (crab, lobster, whelk, bass, scallop, cuttlefish and sole) the majority of which were landed direct, under contract, to processors locally and nationally. While it may not be feasible or attractive to process these species in Weymouth other processors for these species

exist. If there was a mechanism by which these other processors could bid on these landings on an open sale basis there maybe an opportunity to increase the first sale value of landings.

One way of increasing accessibility of the landings to potential fish / shellfish buyers would be through a remote-bidding electronic auction. The introduction of such systems appears to be a significant factor in the increase in landings at Plymouth and Lerwick. Over the past ten years both ports have bucked the trend of declining landings seen at other UK ports. Both of these market operators believe that the e-auction was significant in turning around otherwise ailing ports.

After discussion with the leading suppliers of e-auction systems in the UK seafood industry (Aucxis) it was clear that current landings at Whitehaven would not justify the investment of a full electronic auction system. However, for around £90k it would be possible for Weymouth to be set-up as a satellite auction joined to a main hub market elsewhere e.g. Plymouth, Brixham.

Unlike the larger scale UK auction markets a local fish auction could provide the opportunity for foodservice companies or even members of the public to buy direct. With some additional support and transparent pricing, fish preparation and transport could be added as 'click box' options.

There are currently no auctions in the UK known to be operating in this way but with close proximity

to London it is recommended that the concept is developed further. This could for example be through an existing agent or a new Community Interest Company (CIC) or co-operative. Here a commission would be taken to cover the cost of renting a small unit, providing a chilled holding store, provision of weighing scales, sorting of catches and rental of e-auction software.

Payments could be received via PayPal or credit card, or via a more traditional buyers bond (an amount of money lodged with the auction operator). The former would alleviate cashflow issues which often challenge such initiatives. The successful buyer would be responsible for all add-on costs post sale, such as filleting, packaging and delivery.

10.6 Direct selling to restaurants

In other areas of the UK some fishermen have reported success in selling direct to wholesalers or restaurants. Fishermen such as those involved with 'Drekly Fish' and 'Kernow Sashimi' in Cornwall have seen significant increases in the value of catches though they would acknowledge that was as a result of significant cost and effort.

Thirty fishing vessels within the Dorset and East Devon FLAG are part of the 'Reserve Seafood' initiative set-up in 2015 by the Blue Marine Foundation in conjunction with Direct Seafood Holdings to link sustainable fishers working within the Lyme Bay marine reserve and restaurants in London.

As well as promoting sustainable fishing, through adoption of Code of Practice and responsible fishing, through adoption of the Seafish Responsible Fishing Scheme (RFS), the Reserve Seafood brand is also supported by stringent fish handling / quality practices.

With assistance from the FLAG each vessel involved in the Reserve Seafood project has access to insulated fish / ice bins and quayside ice machines and cold stores to ensure that the core temperature of the fish is reduced as quality as possible. By controlling temperature the growth of bacteria that lead to fish spoilage are greatly reduced, resulting in a visually better product and a long useable life (known as shelf-life).

To ensure the provenance and complete traceability of catches vessels selling landings through the Reserve Seafood brand are fitted with inshore Vessel Monitoring Systems (iVMS).

At the start of the project catches were collected daily and transported to London by road but peaks and troughs in supplies due to weather and fish availability resulted in shortage or excess supply to demand. To reduce under / over-supply and to reduce transport costs catches are now sold via the Plymouth fish auction, which allows trade buyers to bid on fish remotely via an electronic, web-based internet auction system.

Blue Marine Foundation advised that an internal evaluation of the project was being undertaken and additional ways of marketing

and promoting the Reserve Seafood brand were also being considered.

10.7 Sustainability certification

In recent years independently assessed seafood sustainability scores have become increasingly important in both national foodservice and food retail supply chains. The Marine Stewardship is considered by many environmental Non-Governmental Organisations (eNGOs), retailers and foodservice companies as the 'gold standard' in seafood eco-labelling.

The experience of the seafood supply chain in Cornwall with Cornish sardine and Cornish hake fisheries both being certified to MSC standard has been positive with a significant increase in market demand and, over time, an increase in price.

In Scotland more than 70% of catches landed are from MSC certified fisheries which was seen as vital to avoid loss of market share to Iceland where the state is supporting all commercial fisheries through the MSC assessment process.

However, the MSC is not without detractors and the costs associated with certification (c. £50k) are often a significant barrier to smaller (less valuable) fisheries entering the certification process as the perceived costs are seen to outweigh any possible benefits. For this reason the Dorset and East Devon FLAG and local stakeholders may wish to consider alternative seafood assessments, such as:

i) Risk Assessment for Seafood Sourcing (RASS)

RASS was set-up and run by Seafish in response to growing demands from UK seafood companies wishing to provide assurance to customers that the sustainability of products had been independently assessed and verified. It also provides a methodology for risk-assessing fisheries where there is no stock assessment data so is particularly applicable to shellfish fisheries in the area.

At present RASS operates at a broad spatial scale but a proposal from SIFCA during this project was to approach Seafish to discuss a RASS-inshore which could be linked to an IFCA area and provide greater detail / focus on inshore fisheries in an area.

ii) Friend of the Sea

Recognised by some retailers (most notably Waitrose) as an alternative to MSC, Friend of the Sea offers a low cost (c. £10k per fishery) independent fishery assessment

11. CONCLUSIONS

This section brings together research uncovered by this study and provides a summary of the end markets for fish and shellfish landed in the Dorset and East Devon FLAG area and identifies both opportunities and barriers to growth.

Landings from the 120 vessels fishing from 8 ports / harbours within the fisheries of the Dorset and East Devon FLAG area are worth nearly £7M at first sale value. Over 50 species of fish and shellfish were landed in the area in 2017 but landings of shellfish, particularly crab and lobster, dominate the value and tonnage of seafood. Taken collectively the value of crab, lobster, spider crab, scallop and whelks account for £4.4m or 65% of landings by value (75% by weight). Catches of these species have been relatively stable in recent years and demand (and therefore price) is at a 20yr high and as a result there is little appetite to develop alternative markets or processes.

11.1 Export markets

It is estimated that the end market for 73% (see fig. 27) of the catch by value is export either to the EU (mostly France, Holland, Spain and Italy) or, in the case of whelk and crab, to the growing market in Asia.



Generally, these markets require live or unprocessed fish and shellfish, preferring to add value locally or consume in whole form so there is limited scope for processed products. The larger processors within the FLAG area are already engaged in export to the EU but only tentatively engaged with the Asian market, often through an agent or intermediary.

The demand for independently sustainably certified is less of an issue in export markets but this is likely to become a growing feature in these markets in the medium/long term. The certification process and precursors to it (e.g. stock assessments and management plans) can take significant time so it is recommended that steps be taken now to begin certification for this market. Such work would be eligible for EMFF funding via the FLAG.

11.2 Adding value through processing

There is value added processing (most crab picking) within the area but this is limited by access to labour, fluctuating supply and strong demand from the Chinese market for whole live crab. Processing of most species is labour intensive and for it to be a profitable activity, businesses rely on a continuous supply of raw materials. Within the region it is hard to identify a species that would lend itself to further value-added processing.

The non-shellfish catch is made up of some of the highest value fish in the UK such as dover sole and bass. Both species require little value-added processing and have a strong market demand in whole or primary processed (skinning or filleted) form so there appears little scope to increase value adding processing in this area.

At a smaller scale there appears a growth opportunity for fishers and families or small independent retailers to diversify and add-value through the production of a wider range of value added offerings such as: local fish pies, seafood skewers, scallop kebabs, cuttlefish risotto, crab chowder, lobster bisque. With appropriate training and marketing support these could be sold direct to consumers via farmers markets, seafood festivals or retail shops under a 'Seafood Caught and Made in Dorset' brand.

11.3 Retail

UK seafood consumption shows a small increase in the amount of seafood consumed each year but the range of seafood eaten remains quite narrow with imported species of salmon, prawns, tuna, cod and haddock still accounting for the lion's share of seafood sales.

11.3.1 Local retail

Within the FLAG area there are already a number of independent fishmongers and there is no evidence to suggest that the local consumer demand would support an increase in numbers. Providing a greater awareness of the seafood available locally and seasonally through marketing / branding could assist sales growth in this area. Improved signposting to fishermen wishing to sell their own catches could also help catchers achieving a higher price for at least part of the catch. Such work would be eligible for EMFF funding via the FLAG.

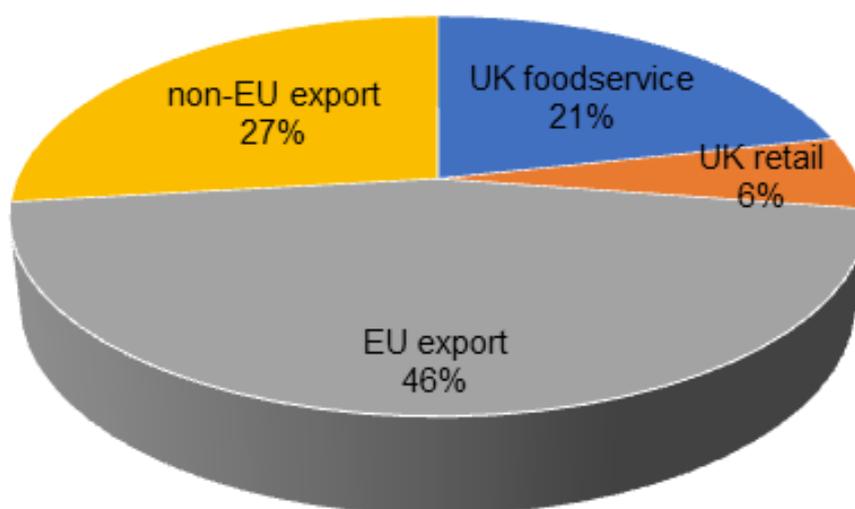


Fig 27. Breakdown of landed catch value by end market

11.3.2 National retail

Demonstrating the sustainability of a species or fishery is now an integral part of supplying seafood produce to larger retailers or foodservice companies because of their policies in respect of sustainability and, more broadly, corporate social responsibility (CSR). For this reason, fish products with the MSC eco-label receive an almost automatic listing with retailers. Fisheries which are non-MSC accredited pass through a sourcing decision tree process which considers the MCS 'good fish guide' scores and or Seafish RASS scores.

National retailers also require suppliers to adhere to strict hygiene, traceability and food manufacturing standards such as those accredited by the British Retail Consortium (BRC). The cost of attaining such standards is often considerable and precludes smaller suppliers from securing sales into this market. Despite these barriers one processor in the area already supplies national retail.

The limited continuity of supply of many of the species landed and limited independent scoring

of sustainability appears to be limiting further growth in this area.

To address the sustainability issue further work should be carried out to progress MSC certification to other significant species caught and landed in the FLAG area. For lower value parts of the catch alternative independent sustainability scoring such as the Seafish RASS scheme should be considered.

11.4 Foodservice

Sales into the foodservice sector (catering, pubs, restaurants etc) locally and nationally are estimated to account for 21% of sales (based on 1st sale value). The main species entering this supply chain are: lobster, crab, sole and bass. Typically, these are high value species where very little processing is required by the end user so there is limited scope to add value.

Improved signposting to suppliers (processors or catchers) through an online directory could improve access to the local foodservice market. Similarly, relatively low-cost social / digital media campaigns could help raise awareness of seasonal opportunities provided by local catches.

On a national scale, larger foodservice chains like Compass, Brakes, Hilton and others now preferentially source from MSC fisheries so again the certification of species landed in the area to the MSC standard could provide significant benefit to market access.

In summary, adding value at significant scale through processing appears limited by customer demand and by poor continuity of raw material supply. The greatest potential for significant sales volume growth in the UK retail and foodservice markets appears to be through the certification of fisheries to the MSC standard.

At a smaller scale there appears to be opportunities for sales growth through the development and promotion of a regional brand.

12. RECOMMENDATIONS

The following recommendations aim to highlight the positives of the region's seafood industry in order to diversify sales, add value over time and contribute to the long-term sustainability of the most significant fish and shellfish stocks in the area.

- i.** Establish a pan supply chain working group this could be a sub-group of the FLAG or a broader coalition of active stakeholders. The aim of this group would be discuss projects that promote and development all parts of the seafood supply chain, initially over a 3-yr timeframe.
Budget: Minimal in first instance
- ii.** Consider progressing the local sole and lobster fisheries to full assessment against the Marine Stewardship Council (MSC) standard
Budget: £80-100k
- iii.** Develop generic 'Seafood Dorset / Great Dorset Seafood / Seafood Devon' branding toolkit for business to consumer (B2C) marketing, such a kit would include:

 - Website;
 - Banners / stickers;
 - Recipe cards and Pennant flags for vessels.
- These items could also be used to support local fish festival or other regional events on the 'foodie' calendar.
Budget: £15-25k
- iv.** Develop a 12-month digital / social media publishing blogs / vlogs and other low cost visual content on the following social media channels (e.g.Youtube; Instagram; Twitter and Facebook).
Budget: £15-18k
- v.** Business directory website (seafood search tool) and app to promote and signpost business to business (B2B) market development opportunities.
Budget: £8-10k
- vi.** Discuss with Seafish the delivery of a series of regional Risk Assessment for Sourcing Seafood (RASS) to provide a low-cost, credible, independent assessment of locally landed fish and shellfish species where MSC would be economically unviable
Budget: £0-5k
- vii.** Deliver a 'Want to sell your own catch' event in the region. This would be a 2-day workshop bringing speakers from successful Community Supported Fishery (CSF) or direct selling models to share experience on day 1 and day 2 would be a basic introduction to fish mongering, including practical advice on food safety, legislation and basic processing skills.
Budget: £8-10k
- viii.** Investigate scope and feasibility for a remote auction at Weymouth – linked to Plymouth or Brixham clock auction. This could be owned co-operatively and jointly run by local agent and either Brixham or Plymouth Trawler Agents (BTA, PTA)
Budget: £3-5k



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