SEAFISH
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First Interim Report

Profitable Futures for Fishing

First Interim Report

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1 Introduction and background

This is the First Interim Report of the Profitable Futures for Fishing project conducted for the Scottish Government Marine Division (SGMD).

This report is intended give a preliminary overview of the first three consultation events held for scallops, nephrops and demersal sectors of the fleet.

The second and third nephrops events, the crab and pelagic events will be reported in the Second Interim Report, due to be delivered on 20 March 2009.

An overview of the consultations events is given in Table 1.1.

	1	2	3	4	5	6	7	2
Segment:	**Scallops**	**Nephrops – trippers, any length Meeting One**	**Demersal**	**Nephrops – trippers, any length Meeting Two**	**Nephrops - Day Boats trawl & creel Meeting One**	**Crabbers – any length**	**Pelagic**	**Nephrops - Day Boats trawl & creel Meeting Two**
Consultants:	HC, TR, SM, JA, DO	HC, ME, SM, JA, DO	HC, TR, SM, JA, DO	HC, TR, SM, JA, DO	HC, TR, DO, SM, +1 seafish	HC, TR, SM, JA, DO	HC, KG, SM, JA, DO	HC, AB, SM, JA, DO
Town:	**Edinburgh**	**Fort William**	**Peterhead**	**Fraserburgh**	**Glasgow**	**Inverness**	**Aberdeen**	**Fort William**
Venue:	Marriot Hotel Glasgow Road	Moorings Hotel	Waterside Hotel	Fraserburgh Leisure Centre	SECC Crowne Plaza Hotel	Thistle Hotel	Airport Thistle Hotel	Moorings Hotel
Friday	**Friday**	**Friday**	**Friday**	**Saturday**	**Friday**	**Thursday**	**Friday**	**Friday**
Date:	**16th Jan**	**23rd Jan ***	**30th Jan**	**31st Jan**	**20th Feb**	**5th March**	**6th March**	**23rd Jan ***
Time	1030 - 1530	1030 - 1530	1030 - 1530	0900 - 1200	1030 - 1530	1030 - 1530	1030 - 1530	1030 - 1530

Table 1.1 List of consultation events for the project

1.1 Research activity to date

Desk-based research and analysis undertaken by study team to characterise the Scottish scallops sector was conducted using information from Seafish, Seafood Scotland and SGMD.

Information presented in this report, along with some further analysis, will be used while evaluating the impacts, feasibility etc of proposed actions and selecting the final priority actions to recommend in the final report of this study.

1.2 The fleet and fish stocks

Fleet segment characterisation was conducted by Seafish based on survey and official data.

For the purposes of analyses in this study, Scottish boats are defined as those whose port of administration is in Scotland.

The port of administration is a good indicator of where a vessel is based. Should a boat with Scottish port of administration land its catch overseas (or in another part of the UK), the vessel's port of administration would still deal with collecting the relevant landings data, which would then be entered onto the management information system(s) used by the Scottish Government (SG). The annual statistics published by the SG define the nationality of a fishing boat by its port of administration. A vessel's port of administration can be changed.

There are other indications of a vessel's nationality, such as its Port Letter Number (PLN) or its home port, or a combination of these. The home port of a vessel is regarded as the port at which the vessel most commonly lands.

The Fishery Research Service (FRS) in Aberdeen provided up-to-date comment on the most recently available stock analysis from ICES and ensured that the most recent data were used on presentations to the events.

1.3 Financial performance of the fleet and drivers of profit

Analysis of the financial performance of the fleet is based on data from vessel accounts, collected by Seafish and on data relating to activity and landings, submitted by vessels to SGMD. Seafish relies on data from SGMD and MFA to complete these analyses.

Many of these tables show average per vessel figures for the fleet segment and for the top and bottom quarter of the segment by earnings figure, or the average figures for the most and least profitable quart of vessels in the segment.

These ways of splitting the vessels into quarters gives a good indication of the variation within the segment which is important to consider when considering any potential actions. The characteristics of the most and least profitable (profit as percentage of sales) vessels indicates the

1.4 Markets for the catch

Market information was collected from Seafood Scotland and Seafish and key elements were included in the presentations to attendees at the start of each event. Many attendees have commented that the information presented triggered and influenced their thinking during the events and this comment is reflected in the priority areas and actions that arose during the events.

1.5 Outputs from events

After each event, facilitators produced electronic versions of flip charts from each break-out table. These were then reviewed by one author for each event who combined outputs into one report which reflects the outputs of the whole event. Initial comment, analysis on impacts and prioritisation is included in this section.

1.6 Structure of this report

This report is split into four main sections:

1 Introduction and Background
2 Scallops sector
3 Nephrops sector
4 Demersal sector

The outputs from the various segments will be considered together during the final analysis and evaluation phase of the project and the outcomes of that work will be included in the final report.

The structure, order and presentation of findings and analysis will be revised and improved in the final report.

2 Scallops Sector

The scallop sector consultation event was held on 16 January 2009 in Edinburgh. Much of the information contained in this interim report was presented to the attendees at the start of the event.

2.1 The Fleet and Fish Stocks

Figure 2.1 shows the distribution of catches of scallops by Scottish vessels in 2008, clearly indicating two main findings. First, this is a largely inshore fishery and second, Scottish vessels fish around the entire UK and in northern France.

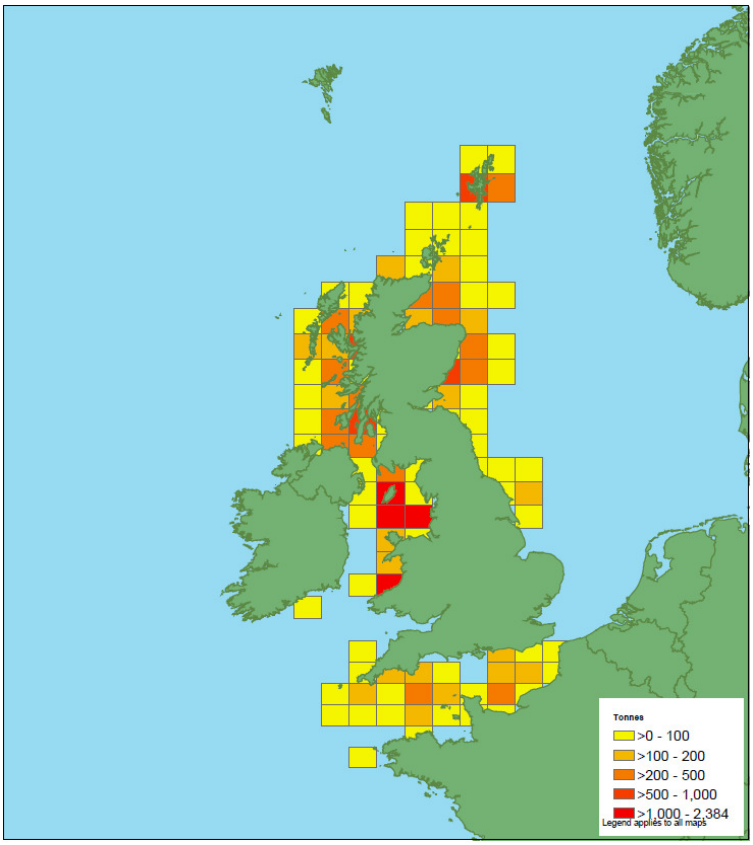


Figure 2.1 Location of scallops caught by Scottish vessels, 2008
Source: SGMD management information

	Segment Total	Average Per Vessel
Number of Active Vessels	49	
Length (m)		17.20
Power (kW)	13,716	280
VCU	11,073	226
Registered Tonnage (GT)	3,236	66
Days at Sea	8,375	171
Volume of Landings (Tonnes)	8,524	174
Value of Landings (£)	£15,905,000	£325,000
Vessel Age (years)		26

Table 2.1 Segment characteristics, 2007 – NS & WoS scallop dredge over 10m (Scottish vessels)

	No of active vessels	Sum of days at sea	Sum of landings (Tonnes)	No. of vessels required if all did max days at sea	No. of vessels required if all did 80% of max days at sea
NS & WoS Scallop dredge	49	8,375	8,524	32	40

Table 2.2 Capacity utilisation, 2007

	Average Per Vessel
Total Crew	4
Full Time Crew	4
Part Time Crew	
Foreign Crew (as % of total crew)	43%

Table 2.3 Crew characteristics, 2007 – NS & WoS scallop dredge over 10m (Scottish vessels)

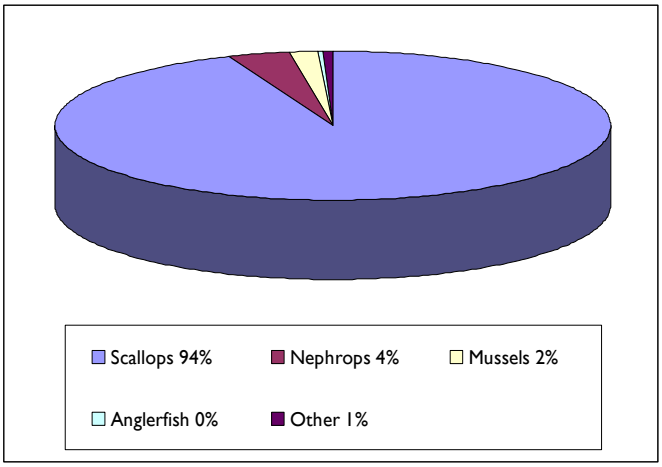


Figure 2.2 Catch composition (in value), 2007 - NS & WoS scallop dredge over 10m (Scottish vessels)

2.2 Financial performance of the fleet and drivers of profit

Average per boat for:	Top quarter of earners	Segment average	Lower quarter of earners
Fishing income	£685,000	£325,000	£107,000
Fuel & Oil	£110,000	£58,000	£24,000
Crew share	£181,000	£86,000	£28,000
Operating Profit	£144,000	£22,000	- £42,000
Net Profit	£86,000	£2,000	- £48,000
Days at Sea	228	171	117

Table 2.4 Average vessel performance, 2007 - NS & WoS scallop dredge over 10m (Scottish vessels)

Average per boat for:	Most profitable quarter	Least profitable quarter
Fishing income	£719,000	£106,000
Net Profit	£177,000	-£30,000
Vessel length (m)	19	13
Power (kW)	406	155
Volume landed (Tonnes)	284	49
Days at Sea	213	129

Table 2.5 Characteristics of the most profitable quarter and the least profitable quarter, 2007 NS & WoS scallop dredge over 10m (Scottish vessels)

The term profitable refers to operating profit as a percentage of sales, and does not incorporate any aspect of return on investment.

	Most profitable quarter		Segment		Least profitable quarter	
	Average (£)	% of Earnings	Average (£)	% of Earnings	Average (£)	% of Earnings
Fishing Income	649,400		324,600	99%	113,000	
Non-Fishing Income	5,200		2,600	1%	900	
Total Earnings	**654,600**		**327,200**	**100%**	**113,900**	
Fishing Expenses						
Commission	19,500		9,700	3%	3,400	
Harbour Dues	8,400		4,200	1%	1,500	
Subscriptions & Levies	7,300		3,300	1%	700	
Shore Labour	2,400		1,600	0%	500	
Fuel and Oil	86,800	13%	57,900	18%	30,900	27%
Boxes	2,300		1,500	0%	500	
Ice	2,500		1,700	1%	600	
Crew Travel	9,800		8,000	2%	6,300	
Food Stores	15,200		10,200	3%	5,400	
Quota Leasing	200		200	0%	100	
Days Purchase	200		200	0%	100	
Other Expenses	13,600		11,100	3%	8,700	
Crew Share	172,700	26%	86,300	26%	30,100	26%
Total Fishing Expenses	**341,200**	**52%**	**195,800**	**60%**	**88,700**	**78%**
Vessel Owner Expenses						
Insurance	20,600		16,500	5%	12,000	
Repairs	62,800		51,000	16%	40,200	
Gear	22,800		18,500	6%	14,600	
Hire and Maintenance	13,500		9,000	3%	4,800	
Other Vessel Owner Expenses	18,000		14,500	4%	10,500	
Total Vessel Owner Expenses	**137,700**	**21%**	**109,600**	**33%**	**82,200**	**72%**
Total Expenses	**478,900**	**73%**	**305,400**	**93%**	**170,900**	**150%**
Profit (operating)	**175,700**	**27%**	**21,800**	**7%**	**-57,000**	**-50%**
Depreciation	36,400		12,500	4%	5,700	
Interest	22,300		7,700	2%	3,500	
Net Profit	**117,000**	**18%**	**1,600**	**0%**	**-66,200**	**-58%**

Table 2.6 Average cost structure, 2007 - NS & WoS scallop dredge over 10m (Scottish vessels)

2.3 Markets for the Catch

Information from Seafood Scotland was presented to attendees and this information is simply reproduced in this report. Further analysis will be included in the final report.

International Context

High growth in the world wide production: +175%
- 1990: 800,000 tonnes
- 2006: 2,200,000 tonnes

(FAO figures)

- Fisheries: 750,000 tonnes (35%)
- Aquaculture: 1,400,000 tonnes (65%)

- World wide market worth: 800M USD in 2006

→ 1% of the total world wide sale of seafood

Figure 2.3 International context of scallops production

The main producers

Fisheries Production Volumes (FAO 2006)		Aquaculture
China		1,170,000 tonnes
Japan:	272,000 tonnes	212,000 tonnes
USA:	223,000 tonnes	
Argentina:	80,000 tonnes	
Canada:	63,000 tonnes	
France:	32,000 tonnes	
UK:	**24,000 tonnes**	
Peru:	19,000 tonnes	12,000 tonnes
Chile:		16,000 tonnes
Australia:	9,000 tonnes	

Figure 2.4 Main producing countries for Scallops

International Trade

Main Exporters:	US, Japan, Canada, UK, China, Peru and Argentina
Main Markets (value):	France (25% of the world wide sales) USA Hong-Kong Spain and Italy
Main products are:	Frozen Scallop meat roe and roe less Fresh Scallop Meat Very little Live Scallop

Figure 2.5 International trade in scallops

The EU market for FROZEN Scallops

France is leading the way

With annual imports at 120,000 tonnes in 2007 (€200M), France is the leading frozen scallop importer in Europe.

Spain, is the second largest EU market

At around 5,000 tonnes (€ 19M), Spanish annual imports of frozen scallops are significantly below those of France.

Followed by Italy who imported less than 4,000 tonnes (€ 18M) in 2007

Figure 2.6 The EU market for frozen scallops

The French Market

- 2007 Imports (live weight equivalent)
  - 15,000 tonnes of fresh scallop meat
  - 120,000 tonnes of frozen scallops
    - Total value: €200M (25% fresh, 75% frozen)
- 2007 Export (live weight equivalent)
  - 6,000 tonnes of fresh scallop meat (Spain/Italy)
  - 30,000 tonnes of frozen scallop (Spain)
    - Total value: €35M (20% fresh, 80% frozen)

Figure 2.7 The French market for scallops

- **The French Market for FRESH Scallop**
- Domestic market estimated at 35,00 tonnes (live weight equivalent)
- The domestic fisheries produce less than 50% of the country needs
- Imports from the US (50% in value) and UK (40% in value)
- Steady increase year on year in volume or value
- All year round import, servicing the restaurant trade mainly, fish mongers and retailers

Figure 2.8 The French market for fresh scallops.

The French Market for FROZEN Scallop

- The domestic market is estimated at 110,000 tonnes per year (live weight equivalent)
- Scallop is one of the top 5 species used in new product development in France
- Imports from a variety of countries:
  - Canada, Argentina, Peru, USA, Chile, Japan, Vietnam and UK
- Price segmentation exists by origin:
  - Canada, USA, UK: 10 to 12 euros/kg
  - Argentina, Peru, Chile, Japan, Vietnam: 5 to 7 euros/kg
- European frozen scallop imports were hit by a downturn in French demand during 2007. Although import volumes rose modestly last year in markets such as Spain and Italy, these increases were insufficient to balance the drop in imports into France.

Figure 2.9 The French market for frozen scallops

Scallops SWOT

Strengths

- Scotland has a reputation for high quality scallops (compared to contamination scares elsewhere)
- Scallops from Scottish waters are considered pure and fresh
- They are light in colour and this appeals in certain markets

Weaknesses

- Scottish scallops are expensive compared to the low priced frozen products from around the world
- There is no strong Scottish association with scallops and so it is difficult to command a premium
- There was a cadmium issue in past leaving brand problems

Opportunities

- France accounts for half the consumption of scallops in Europe by value (a significant amount is frozen)
- The French pay a premium for their scallops, including frozen products
- Scallops with roe sell well in Italy

Response

- Target France with premium products

Response

- Build a strong association with Scotland for quality scallops

Threats

- Although there is a reasonable demand for scallops in Spain and Italy, the prices are half those paid in France
- There is virtually no market for scallops in Portugal
- Chile, Argentina and the US are important sources of scallops
- China hasn't yet got licence to export to Europe but this could change

Response

- Consider Northern Italy as a niche market for premium Scottish scallops

Response

- Build a strong association with Scotland for quality scallops

Figure 2.10 Scallops marketing SWOT. Source: Seafood Scotland

2.4 Scallops event findings and analysis

2.4.1 Current Conditions, Opportunities and Challenges

The issues discussed by attendees at the consultation event have been summarised as either strengths and opportunities or weaknesses and threats to the Scallop fishery. The issues have been grouped under the following headings: Product, People, Fleet Operation, Access to the Fishery and Stocks and Market Demand.

What Works Well? **What are our Opportunities**	**What Doesn't Work Well?** **What Challenges do we Face?**
Product	
• Quality product with strong provenance • Healthy product 'it's good for you'	• Some processors at one time guilty of soaking product which damaged reputation of Scottish scallops • Threat from toxins (not an issue at the moment but remains a threat to the fishery) • No product development to meet market needs. Processors are not interested in/willing to change or invest
People	
• Resilience of those active in the fishery	• No new generation of fishermen coming through
Fleet Operation	
• Scallop fleet is nomadic and can operate around the British Isles	• Lack of transparency in transaction with buyers: o Sell direct to processor so difficult to know if getting market price. Price hasn't shifted in 15 years. o Vessel gets paid on meat weight not delivered product (in shells). Rely on processor to provide weight and then price. o Yield is dependent on skill of shucker not quality of catch. • Price achieved by the vessel for its catch can fail to cover the cost of operation • Further fuel price increases. 'If fuel had stayed high, the fleet would be tied up' • Ageing fleet and difficult to reinvest / access finance. Cost of repairs can be high.

Table 2.7 SWOT analysis output from Scallops Sector Event (section a)

What Works Well? What are our Opportunities	What Doesn't Work Well? What Challenges do we Face?
Access to the Fishery and Stocks	
	• Have been new entrants to the fishery which is one reason for over-supply which is accompanied by fear that stocks are being over-fished. • Ongoing threat to stocks from latent entitlement to fish for scallops (and as a consequence the potential size of the fleet and scale of the fishery) • Threat of increasing regionalisation of fisheries management which is likely to be detrimental to the nomadic scallop fleet • Threat of the powerful environmental lobby which can quickly close a viable fishery
Market Demand	
• Scallop fishery can provide a year round supply of product • Current exchange rate benefiting exports • New market opportunities in China and Japan • UK market has substantial opportunity for growth	• Supply currently exceeds demand which deflates price • Small number of buyers and high number of vessels mean that buyers hold a large amount of power. Vessels may only sell to one or two processors • Threat from cheap imported product, particularly aquaculture from South America

Table 2.8 SWOT analysis output from Scallops Sector Event (section b)

2.4.2 Priority Areas and Proposed Actions

The consultation event invited attendees to vote on which issues they considered to be a priority. However, because many of the issues were inter-linked the analysis has grouped the findings under three overarching priority areas:

1 Access to the Fishery and Fleet Efficiency;

2 Vessel / buyer relationship and transparent Sales; and

3 Product and Market Development.

2.4.2.1 Access to the Fishery and Fleet Efficiency

Discussions at the event highlighted a wide range of issues that are each linked to how access to the fish stock is gained and managed. The issues can be summarised as:

- supply is exceeding demand and as a result the market price for landings is depressed;
- too many individuals or organisations have access to the fishery (through licenses which are currently inactive) and this will always limit the potential to achieve long-term sustainability within the fleet;
- increasing restrictions on access to fishing grounds could adversely affect the scallop fleet more than other sectors; and

- the knock-on effect of the above reduces profitability across the fleet and this hinders long-term investment in the sector.

These issues are described in more detail in the following paragraphs.

- At the forefront of attendees' minds was the concern that effort, and as a result, supply is exceeding market demand. The industry recognised that there has been an increase in effort in recent years, with more, and larger, vessels operating within the fishery. It was believed this had brought benefits through the sector's ability to provide a year-round product but that there had been limited success in market development to improve the volume or the value of sales. Furthermore, because of the fragmented nature of the fishery it is difficult for the industry itself to adjust production to suit current market conditions.

- When supply exceeds demand it depresses the market price and leaves the vessels in a vulnerable position and struggling to cover their current operational costs. Many attendees commented that the price for their catch had not improved in the last 15 years, despite steep increases in the cost of catching the product. The static price versus the rising cost of operation means that maintaining profitability is increasingly difficult for the fleet. One attendee commented 'there is no more meat on the bone and the fleet is facing collapse'.

- In addition, attendees were concerned that, even if supply and the market do become more evenly matched and the price rises, long-term profitability and sustainability will always be difficult to achieve as when the price improves it will attract additional vessels to the fishery through licenses which are currently inactive. The knock-on effect is that landings will increase and market price will again be depressed. The feeling of attendees was that there would always be someone willing to accept negligible profitability in the short-term to the detriment of long-term investment and sustainability in the sector.

- Attendees were also concerned that current fishing effort and the level of supply may be having a detrimental effect on stock sustainability and that the sector may soon have to address the impacts of over-fishing.

- In addition to concerns over the scale of the potential fleet and current levels of activity there was also a fear amongst attendees that the new Marine Bill proposed for Scotland and the potential introduction of Marine Protected Areas could adversely affect the scallop fleet, perhaps to a greater extent than other fleets. The main reason for concern was that the reduction in the area where the fleet can fish could serve to intensify effort in non-protected areas therefore potentially have negative environmental impacts elsewhere. A further area of concern was related to the nature of the scallop fishery in particular. The fleet is highly nomadic, changing the areas targeted, often for positive environmental reasons. Therefore any restriction to the grounds which could be accessed by the fleet would be in stark contrast to its operational model and would be expected to increase the complexity and risk to the scallop fleet.

- The proposed actions identified during the event that could help to address these issues include:

Action One: Reduce Current Access to the Fishery

Attendees believed that this action would have to be carefully managed to ensure that the potential benefits are maximised. Discussions identified at least two stages to this action:

- Remove latent license entitlement from the sector, potentially using a three year reference period; and
- Provide financial assistance to restructure the fleet and enable decommissioning.

The benefits of this action are expected to be:

- if future effort can be managed to ensure the threat of over-supply is reduced in the long-term, there will be opportunities to better manage supply to meet market demand and improve price to the vessels;
- a reduction in the risks faced by the fleet will provide greater certainty about long-term viability and will encourage investment;
- a more modern and efficient fleet could be sustained;
- potential to reduce environmental impact from the fleets' activities through a reduced number of vessels and more efficient vessels; and
- as a result of the above, a more viable and profitable fleet, albeit a smaller fleet.

Action Two: Stock Management

Under the priority area of access to fish stocks the issue of stock management was raised. Attendees were concerned that, even if effort was appeared reduced through a reduction in fleet size, over-fishing would remain a threat unless an improved form of stock management could be introduced and managed. However, there were fears that this may lead to a days-at-sea or quota approach which was not viewed as positive progress due to the problems created by this approach in other fish sectors. Two suggestions were put forward but no conclusions reached about their potential positive and negative impacts:

- a minimum shell size for landings, phased in at a change of no more than 2mm per year; and
- a maximum bar length for dredgers operating in certain grounds.

The benefits of improved stock management were considered to be:

- a sustainable fishery;
- overall improvements to the quality of the Scottish product; and
- enhanced reputation of the fishery and product.

Action Three: Study tours

Attendees found it difficult to identify solutions to the problems that they faced and one potentially beneficial action identified was to undertake a study tour to see how other fisheries addressed similar challenges.

The benefits were largely considered to be learning from others and implementing good practice within the Scottish scallop fishery. The knock-on benefits of adopting good practice would be improved sustainability and profitability within the fleet.

Action Four: Research into gear technology and catching method

Attendees identified that it is impossible for an individual business to invest in research or in unproven new technology as profitability is too low and the future is too uncertain. However, there was interest from attendees in support for research into gear technology and catching

methods that could be adopted across the fleet with a view to achieving the following benefits:

- improved fuel efficiency;
- environmental benefits including improved health of stocks; and
- assist the sector to promote its good fishing practices.

Action Five: Loan Guarantee Scheme

The respondents believed that the current constraints on profitability and the crisis in the banking sector will make it difficult to access finance to reinvest in the scallop fishing sector even if other conditions could enable it. There was mention made of the support provided by government to the banking sector and the car manufacturing sector. A favourable loan guarantee scheme was proposed that could support investment in the industry.

The benefits of this were considered to be fleet modernisation and renewal with a subsequent reduction in the number of ageing vessels in the active fleet. The attendees could not identify an alternative to achieving this in the uncertain environment that the sector is currently operating in. However, should many of the issues that currently exist be resolved through alternative actions to improve profitability attendees recognised that there may be less need for such support in the long-term

2.4.2.2 Vessel / buyer relationship and transparent sales

The second priority area identified from the analysis of the event findings is the current relationship between vessels and the on-shore buyers and/or processors. The discussions with vessel operators repeatedly returned to concerns about the sales route for their catch. In general the concerns were centred around two main issues:

- the power a small number of buyers has to determine price from a fragmented fleet; and
- the lack of transparency in the sales process and value chain.

Unlike the whitefish sector the catch of the scallop fleet is not landed to an auction but direct to a processor. In addition a price is not agreed until the scallops have been shucked, where the meat is removed from the shell, by the processor and is then weighed. In effect the processing of the catch is underway before a price is offered to the vessel. This leaves the vessel with little power to either question the price or the weight of the catch and there is no way that the vessel could sell the catch to an alternative buyer if the price offered was believed to be unfair. In addition, the skill of the shucker, who is employed by the processor, will determine the value of the catch to the vessel.

Concerns were also raised about the power that a small number of buyers has to limit the distribution of market price benefits to the vessels.

The lack of transparency that is evident in the sales process was also raised about the wider value chain. Vessel owners commented that they know little about how the product that they catch and the price they achieve relates to the product purchased by the consumer. With a lack of information available to the vessels there was a perception that they are unfairly treated in the value chain, despite the dependence of the value chain on the fishermen to land the product.

The lack of influence the vessel owners have over the price that they achieve makes it difficult for the fleet to identify market initiatives to improve price and therefore improve

profitability. For the fleet the first requirement is a change in their direct sales process. The actions proposed for how this could be improved are listed below.

Action Six: True and Traceable Weighing System

The need to introduce greater transparency in the way in which the catch is valued was seen as the most immediate issue within this priority area. The challenge will be to encourage processors to invest or engage with a system which is expected to bring benefits to the vessels but is less likely to bring immediate benefits to the processors and may even increase the risks to their business.

One potential way to improve the current system was believed to be payment in relation to the weight of shells landed, rather than the weight of the processed product. This solution would be expected to reduce the risk to the vessels from insufficiently skilled employees in the processors but subsequently increase the risk to the processor as it was recognised that yield can vary more within the scallop sector than in other shellfish sectors. The attendees recognised there would be challenges in introducing this particular form of weighing and payment system but hoped that by working with the processing sector it would be possible to establish the optimum solution.

The benefits of introducing a true and traceable weighing system are expected to be:

- greater trust and understanding between processors and the vessels; and
- a true price for the catch landed by the fleet and a shared understanding of how the price is calculated.

Action Seven: Develop a Central Sales Point or an Auction System

The attendees considered that a more open market or a more organised sales route would bring benefits and enable the market price of the product to be reflected in the value obtained for their catch.

The two suggestions were:

- more cooperative action between vessels to sell the catch. For example a central sales point coordinating sales of the catch to the buyers; or
- an open market auction, similar to the auctions used for other fish landings.

The benefits of this action are expected to be similar to the previous action, as vessels would expect this to help them to achieve a true and fair price for the catch they land.

Action Eight: Research to Understand the Value Chain

Attendees were interested in developing a better understanding of the value chain for their product. The lack of information about the value chain appears to lead to suspicion that the vessels are not achieving a fair market price. Research which examines the value chain was suggested so that vessel owners can better understand the factors which influence the price they achieve.

Improved knowledge of the value chain may also provide a good indication of the potential value, i.e. the potential to significantly improve price in the current markets, from the implementation of the other actions proposed under this priority area.

2.4.2.3 Product and Market Development

The third priority area identified for the scallop sector is product and market development. Product and market development covers a range of issues and actions all of which are designed to either improve the reputation of the fishery and therefore the product or to raise the profile of Scottish scallops in new markets. The actions proposed build on the strengths in the scallop sector and seek to address some of the challenges faced.

Attendees identified that the quality and nature of their catch was of value but that potential value was not being realised. Attendees raised the opportunity to develop new markets for the product and recognised that some vessels in association with processors were beginning to take action to do so. One potential avenue to new market development was considered to be markets where other Scottish fish products are sold, but are not an existing market for scallops. Countries where pelagic products are sold, for example Japan, were highlighted as one such opportunity.

Another issue revolved around the development of the product's reputation which attendees highlighted was often in the control of the processing sector rather than in the control of the fleet. One anecdotal comment was made that in the past there had been instances where Scottish scallop products had been soaked in water to increase the weight and therefore the value of the product. It was recognised that this type of behaviour can destroy markets and damage the reputation of the entire Scottish sector but was out of the control of the fleet. In addition, there were comments that the product currently being produced by the processing sector does not always fit with higher value market requirements.

Another issue may offer the potential for greater action by the fleet. Inaccurate information about the environmental impacts of the fleet and the activities of powerful environmental lobbying organisations were seen as threats to both the reputation of the sector and may create a barrier to the development of new and higher value markets. In addition, attendees also identified that the focus of all decision-making about the fishery was on environmental concerns and little consideration was given to social and economic concerns.

The following actions were identified in support of product and market development. Many of the actions involve research as a first-step before any activity to generate positive benefits to profitability is undertaken. This may also be linked to the lack of capacity the fleet has to take action in this particular area.

Action Nine: Scientific Research to Understand Impact of the Fishery

An action was identified to undertake research that would help to counter some of the myths and address some of the unknowns regarding the effect that the scallop fishery and its catching method has on the environment.

The benefit of this was expected to be information that could counter negative publicity generated without robust evidence.

Action Ten: Socio-economic Analysis of the Impacts of the Fishery

Research which improved the understanding of the socio-economic impacts of the scallop sector was considered to be of value in the development of a more balanced approach to decision-making.

Action Eleven: New Product Development

Product development is likely to be within the power of processors but could be encouraged through Seafood Scotland activities. For example one suggestion was to seek to develop frozen half shell scallops for new markets. However, to succeed this will require investment in, and willingness from, the processing sector.

Action Twelve: New Market Development and Market Growth

Two suggestions were made about how markets could be developed, however, similar to the previous action it was recognised that this will require engagement and buy-in from the processing sector. The two suggestions were:

- to work jointly with processors and Seafood Scotland to target and develop new markets; and
- to take vessel businesses to the market so that both sides can learn from the other, for example a visit to French traders.

Greater information exchange between the vessels and the market was expected to have positive benefits and help the catch to better address what the market wants.

In addition, Action Four, identified above under Access to Fish Stocks, which promoted research into gear technology and catching method was also seen as a proactive way to reduce any current environmental impacts created by the fleet's activity and positively promote the product to current or new markets.

2.4.3 Priority Actions

- From the twelve actions identified above, four were prioritised above the others. The following actions reflect the highest priority actions identified by attendees at the event, in order of priority these were:
  - Action One: Reduce Current Access to the Fishery;
  - Action Six: True and Traceable Weighing System;
  - Action Five: Loan Guarantee Scheme; and
  - Action Three: Study Tours.

2.4.4 Summary of the Event Findings

2.4.4.1 Priority Issues

The discussions in the two breakout groups within the event followed the same structure and this allowed different views to be aired. However, overall there was little contradictory information and the same priority areas were identified across the two groups. These issues for the scallop sector can be summarised under the headings:

- Access to Fish Stocks and Fishing Effort, in particular
  - supply is exceeding demand and as a result the market price for landings is depressed;
  - too many individuals or organisations have access to the fishery (through licenses which are currently inactive) and this will always limit the potential to achieve long-term sustainability within the fleet;
  - increasing restrictions on access to fishing grounds could adversely affect the scallop fleet more than other sectors; and
  - the knock-on effect of the above reduces profitability across the fleet and this hinders long-term investment in the sector;

- Vessel-Buyer Relationship and Transparent Sales; and
- Product and Market Development in order to improve the value of the catch.

2.4.4.2 Proposed Actions

Table 2.9 summarises all of the actions identified under each of the three priority areas. The table also splits the actions into High, Medium and Low priority in line with the discussions held at the event. It is expected that, in order to assist decision-making, further consultation will be required to assess potential value to the sector and Scotland against likely cost of implementation of the various actions.

Priority Area	Action	Description	Priority
Access to Fish Stocks and Fishing Effort	1	Reduce Access to the Fishery First step is to remove latent entitlement and second phase is to provide financial assistance for fleet restructuring.	High
	2	Stock Management No clear methodology specified. Requires detailed consideration to avoid mistakes in other fisheries.	Low/ Medium
	3	Study Tours Learn from others about effort management	High
	4	Research into Gear Technology and Catching Method	Medium
	5	Loan Guarantee Scheme To support fleet renewal / modernisation	High
Vessel-Buyer Relationships and Transparent Sales	6	True and Traceable Weighing System	High
	7	Develop a Central Sales Point or an Auction System	Medium
	8	Research to Understand Value Chain	Medium
Product and Market Development	9	Scientific Research to Understand Impact of the Fishery	Medium/ High
	10	Socio-Economic Analysis of the Impacts of the Fishery	Low
	11	Product Development Activities	Low
	12	Market Development Activities	Medium

Table 2.9 Summary of Actions Arising from the Scallop Sector Event

2.5 Scallop sector event list of attendees

List of Attendees	
Gary Buchan	Vessel owner
Owen Crane	Vessel owner
Anne Mosely	Seafood Scotland
John McAlister	Multiple vessel owner
Duncan MacInnes	Industry representative

Tom Nicholson	Multiple vessel owner
John McQuade	Vessel owner

3 Nephrops Sector

3.1 The Fleet and Fish Stocks

FRS kindly supplied up-to-date comments on the most recent ICES advice. The main point seems to be that they have no reason to expect dramatic changes in the available stock in the next few years.

For nephrops, a more likely source of change in opportunity is regulations aimed at protecting whitefish species which are caught as by-catch by nephrops trawl gear.

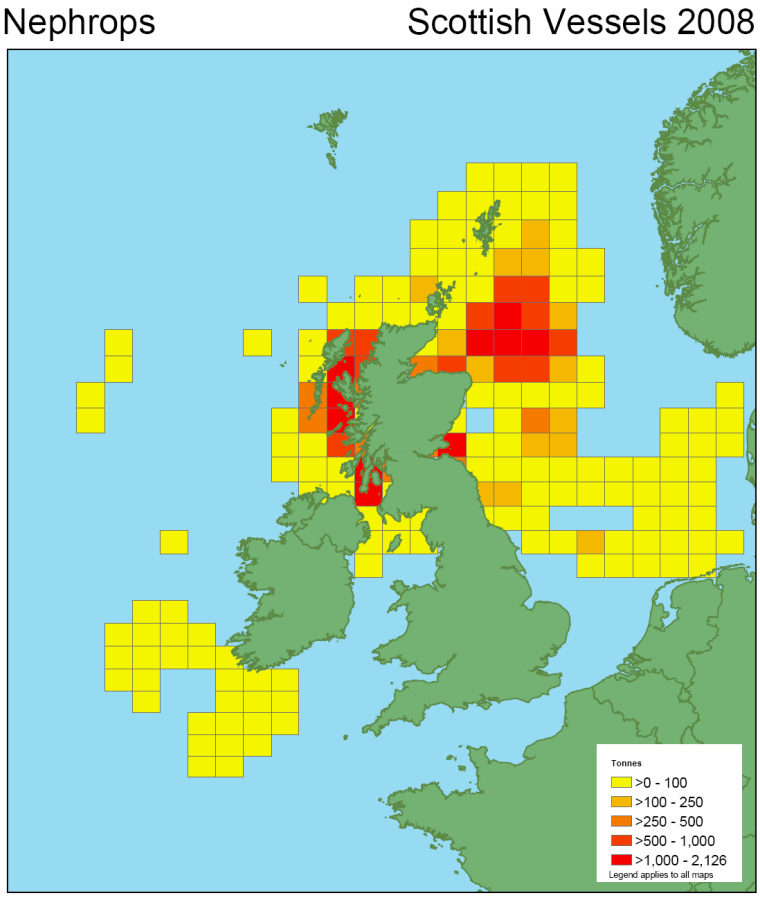


Figure 2.1 Location of nephrops caught by Scottish vessels, 2008.
Source: SGMD Management Information

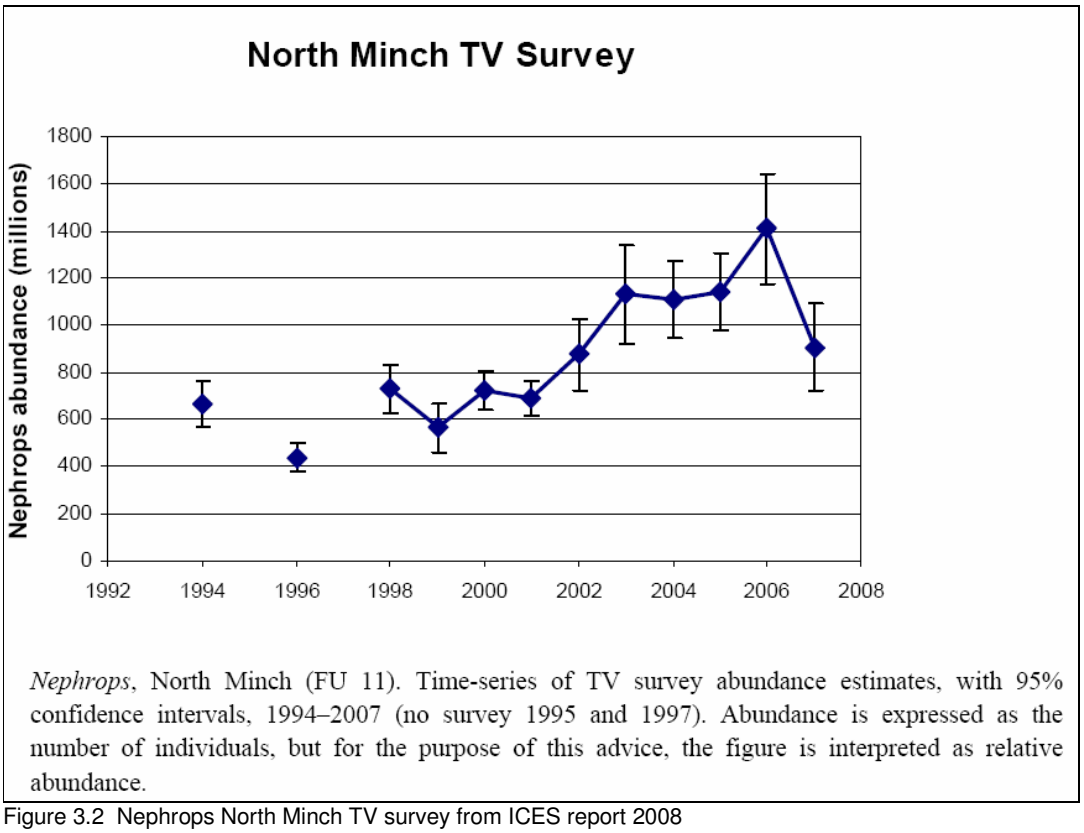
The following items were extracted from the 2008 ICES report to the EU and were supplied to event attendees.

Nephrops in North Minch (FU 11). Single stock exploitation boundaries (advice), management and landings.

Year	ICES advice	Advice for North Minch (FU11)	Recommended landings for VIa	Agreed TAC[1)]	ICES Landings (FU11)
1989					3.2
1990					2.5
1991					2.8
1992	maintain current effort		~11.4	12.0	3.6
1993	maintain current effort		~11.3	12.0	3.2
1994	maintain current effort		11.3	12.6	3.6
1995	maintain current effort		11.3	12.6	3.7
1996	maintain current effort		11.3	12.6	2.9
1997	as for 1996		11.3	12.6	3.0
1998	maintain current effort		11.3	12.6	2.4
1999	as for 1998		11.3	12.6	3.3
2000	maintain current effort		11.3	12.6	3.2
2001	as for 2000		11.3	11.34	3.3
2002	maintain current effort		11.3	11.34	3.4
2003	as for 2002		11.3	11.34	3.3
2004	maintain current effort		11.3	11.3	3.1
2005	as for 2004		11.3	12.7	3.0
2006	No increase in effort		-	17.7	4.2
2007	No increase effort and harvest rate of 15%	3.2	15.0	19.9	4.0
2008	As for 2007	3.2	15.0	19.9	
2009	No increase effort and recent average catch	< 4.1	15.1		

Weights in '000 t.
[1)] Subarea VI and EC waters of Division Vb.

Figure 3.1 Nephrops North Minch TACs from ICES report 2008



Nephrops, North Minch (FU 11). Time-series of TV survey abundance estimates, with 95% confidence intervals, 1994–2007 (no survey 1995 and 1997). Abundance is expressed as the number of individuals, but for the purpose of this advice, the figure is interpreted as relative abundance.

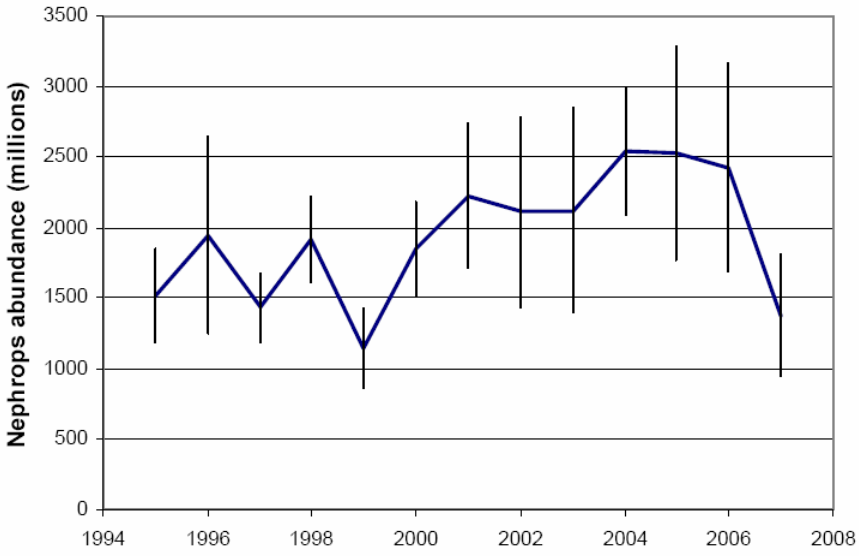
Figure 3.2 Nephrops North Minch TV survey from ICES report 2008

Nephrops in the South Minch (FU 12). Single stock exploitation boundaries (advice), management and landings.

Year	ICES advice	ICES Advice for South Minch (FU12)	Recommended landings for VIa	Agreed TAC [1)]	ICES landings (FU12)
1989					4.7
1990					4.4
1991					4.4
1992	maintain current effort		~11.4	12.0	4.2
1993	maintain current effort		~11.3	12.0	4.5
1994	maintain current effort		11.3	12.6	4.4
1995	maintain current effort		11.3	12.6	4.7
1996	maintain current effort		11.3	12.6	4.0
1997	as for 1996		11.3	12.6	4.3
1998	maintain current effort		11.3	12.6	3.7
1999	as for 1998		11.3	12.6	4.1
2000	maintain current effort		11.3	12.6	4.0
2001	as for 2000		11.3	11.34	4.0
2002	maintain current effort		11.3	11.34	3.3
2003	as for 2002		11.3	11.34	3.9
2004	maintain current effort		11.3	11.3	3.9
2005	as for 2004		11.3	12.7	3.8
2006	No increase in effort		-	17.7	4.6
2007	No increase in effort and harvest rate of 15%	7.2	15.0	19.9	5.5
2008	as for 2007	7.2	15.0	19.9	
2009	No increase effort and recent average catch	< 5.0	15.1		

Weights in '000 t.
[1)] Subarea VI and EC waters of Division Vb.

Figure 3.3 Nephrops South Minch TACs from ICES report 2008



Nephrops, South Minch (FU 12). Time-series of TV survey abundance estimates, with 95% confidence intervals, 1995–2007. Abundance is expressed as the number of individuals, but for the purpose of this advice, the figure is interpreted as relative abundance.

Figure 3.4 Nephrops South Minch TV survey from ICES report 2008

The following information relates to the sector vessels, their characteristics, activity and financial performance. The figures for the North Sea segments were corrected after comments from participants of the Fraserburgh event.

	Segment Total	Average Per Vessel
Number of Active Vessels	106	
Length (m)		14.4
Power (kW)	9,327	187
VCU	7,902	158
Registered Tonnage (GT)	2,225	44
Days at Sea	7,163	143
Volume of Landings (Tonnes)	3,987	80
Value of Landings (£)	£9,124,397	£182,488
Vessel Age (years)		28

Table 3.1 Segment characteristics, 2007 - NS nephrops single rig trawl over 10m (Scottish vessels)

	Segment Total	Average Per Vessel
Number of Active Vessels	100	
Length (m)		19.9
Power (kW)	39,224	392
VCU	30,975	310
Registered Tonnage (GT)	14,002	140
Days at Sea	18,934	189
Volume of Landings (Tonnes)	21,803	218
Value of Landings (£)	£53,145,899	£531,459
Vessel Age (years)		18

Table 3.2 Segment characteristics, 2007 – NS nephrops twin rig trawl over 10m (Scottish vessels)

	Segment Total	Average Per Vessel
Number of Active Vessels	112	
Length (m)		14.5
Power (kW)	17,913	160
VCU	16,386	146
Registered Tonnage (GT)	4,252	38
Days at Sea	18,396	164
Volume of Landings (Tonnes)	7,305	65
Value of Landings (£)	£17,489,000	£156,000
Vessel Age (years)		31

Table 3.3 Segment characteristics, 2007 – WoS nephrops single rig trawl over 10m (Scottish vessels)

	Segment Total	Average Per Vessel
Number of Active Vessels	32	
Length (m)		16.7
Power (kW)	7,967	249
VCU	6,629	207
Registered Tonnage (GT)	1,985	62
Days at Sea	5,938	186
Volume of Landings (Tonnes)	3,999	125
Value of Landings (£)	£9,442,000	£295,000
Vessel Age (years)		28

Table 3.4 Segment characteristics, 2007 – WoS nephrops twin rig trawl over 10m (Scottish vessels)

	Segment Total	Average Per Vessel
Number of Active Vessels	169	
Length (m)		9.6
Power (kW)	20,049	119
VCU	15,011	89
Registered Tonnage (GT)	1,264	7
Days at Sea	22,645	134
Volume of Landings (Tonnes)	4,853	29
Value of Landings (£)	£12,386,000	£73,000
Vessel Age (years)		19

Table 3.5 Segment characteristics, 2007 – Pots and traps under 10m (Scottish vessels)

	Average Per Vessel
Total Crew	6
Full Time Crew	4
Part Time Crew	2
Foreign Crew (as % of total crew)	51%

Table 3.6 Crew characteristics, 2007 – NS nephrops single rig trawl over 10m (Scottish vessels)

	No. of vessels	Sum of days at sea	Sum of landings (Tonnes)	No. of vessels required if all did max days at sea	No. of vessels required if all did 80% of max days at sea
NS nephrops single rig trawl > 10m	50	7,163	3,987	33	41
NS nephrops twin rig trawl > 10m	100	18,934	21,803	64	80
WoS nephrops single rig trawl > 10m	112	18,396	7,305	66	83
WoS nephrops twin rig trawl > 10m	32	5,938	3,999	20	25
Pots and traps under 10m	169	22,645	4,853	69	87

Table 3.7 Capacity utilisation, 2007

	Average Per Vessel
Total Crew	3
Full Time Crew	3
Part Time Crew	
Foreign Crew (as % of total crew)	45%

Table 3.8 Crew characteristics, 2007 – NS nephrops twin rig trawl over 10m (Scottish vessels)

	Average Per Vessel
Total Crew	5
Full Time Crew	3
Part Time Crew	2
Foreign Crew (as % of total crew)	36%

Table 3.9 Crew characteristics, 2007 – WoS nephrops single rig trawl over 10m (Scottish vessels)

	Average Per Vessel
Total Crew	4
Full Time Crew	4
Part Time Crew	
Foreign Crew (as % of total crew)	55%

Table 3.10 Crew characteristics, 2007 – WoS nephrops twin rig trawl over 10m (Scottish vessels)

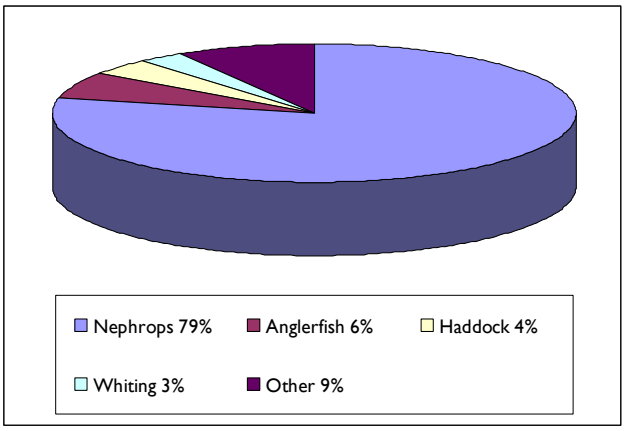


Figure 3.5 Catch composition, 2007 (in value) - NS nephrops single rig trawl over 10m (Scottish vessels)

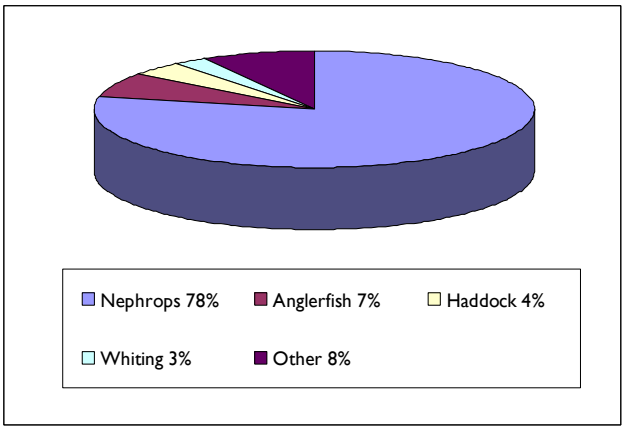


Figure 3.6 Catch composition, 2007 (in value) - NS nephrops twin rig trawl over 10m (Scottish vessels)

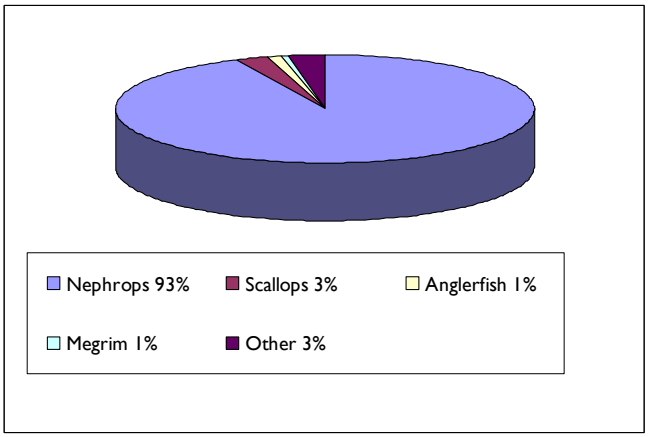


Figure 3.7 Catch composition, 2007 (in value) - WoS nephrops single rig trawl over 10m (Scottish vessels)

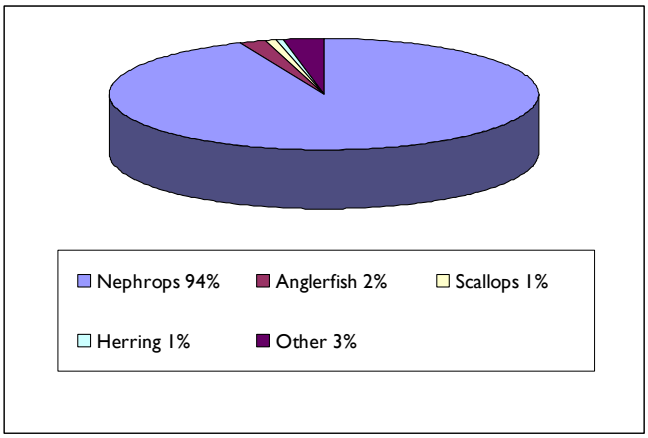


Figure 3.8 Catch composition, 2007 (in value) - WoS nephrops twin rig trawl over 10m (Scottish vessels)

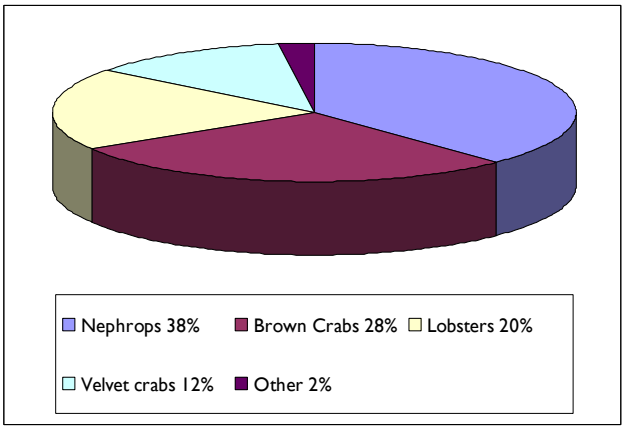


Figure 3.9 Catch composition, 2007 (in value) – Pots and traps between 9 and 9.99m (Scottish vessels)

3.2 Financial Performance of the Fleet and Drivers of Profit

Average per boat for:	Top quarter of earners	Segment average	Lower quarter of earners
Fishing income	£370,000	£183,000	£71,000
Fuel & Oil cost	£47,000	£26,000	£11,000
Crew share	£113,000	£56,000	£22,000
Operating Profit	£96,000	£28,000	-£7,000
Net Profit	£73,000	£19,000	-£10,000
Days at Sea	188	143	110

Table 3.11 Average vessel performance, 2007 - NS nephrops single rig trawl over 10m (Scottish vessels)

Average per boat for:	Top quarter of earners	Segment average	Lower quarter of earners
Fishing income	£874,000	£532,000	£263,000
Fuel & Oil cost	£137,000	£90,000	£57,000
Crew share	£244,000	£148,000	£73,000
Operating Profit	£226,000	£99,000	-£3,000
Net Profit	£179,000	£77,000	-£9,000
Days at Sea	240	189	147

Table 3.12 Average vessel performance, 2007 - NS nephrops twin rig trawl over 10m (Scottish vessels)

Average per boat for:	Top quarter of earners	Segment average	Lower quarter of earners
Fishing income	£271,000	£156,000	£68,000
Fuel & Oil cost	£32,000	£21,000	£11,000
Crew share	£85,000	£49,000	£21,000
Operating Profit	£65,000	£23,000	-£7,000
Net Profit	£41,000	£14,000	-£9,000
Days at Sea	198	164	127

Table 3.13 Average vessel performance, 2007 - WoS nephrops single rig trawl over 10m (Scottish vessels)

Average per boat for:	Top quarter of earners	Segment average	Lower quarter of earners
Fishing income	£499,000	£295,000	£153,000
Fuel & Oil cost	£86,000	£60,000	£42,000
Crew share	£141,000	£83,000	£43,000
Operating Profit	£106,000	£28,000	-£25,000
Net Profit	£70,000	£15,000	-£29,000
Days at Sea	213	186	156

Table 3.14 Average vessel performance, 2007 - WoS nephrops twin rig trawl over 10m (Scottish vessels)

Average per boat for:	Top quarter of earners	Segment average	Lower quarter of earners
Fishing income	£126,000	£73,000	£25,000
Fuel & Oil	£9,000	£6,000	£3,000
Crew share	£30,000	£17,000	£6,000
Operating Profit	£50,000	£21,000	-£3,000
Net Profit	£35,000	£13,000	-£5,000
Days at Sea	172	134	79

Table 3.15 Average vessel performance, 2007 – Pots and traps between 9 and 9.99m (Scottish vessels)

Average per boat for:	Most profitable quarter	Least profitable quarter
Fishing income	£356,200	£76,800
Net Profit	£73,400	-£20,600
Vessel length (m)	17.3	13.2
Power (kW)	268	164
Volume landed (Tonnes)	150	34
Days at Sea	176	115
Volume per day at sea (Tonnes per day)	0.86	0.30

Table 3.16 Characteristics of the most profitable quarter and the least profitable quarter, 2007 NS nephrops single rig trawl over 10m (Scottish vessels)

The definition of profitable is operational profit as a percentage of gross fishing income

Average per boat for:	Most profitable quarter	Least profitable quarter
Fishing income	£784,800	£262,500
Net Profit	£176,700	-£15,000
Vessel length (m)	19.8	19.2
Power (kW)	416	326
Volume landed (Tonnes)	301	113
Days at Sea	218	151
Volume per day at sea (Tonnes per day)	1.38	0.75

Table 3.17 Characteristics of the most profitable quarter and the least profitable quarter, 2007 NS nephrops twin rig trawl over 10m (Scottish vessels)

Average per boat for:	Most profitable quarter	Least profitable quarter
Fishing income	£254,000	£72,000
Net Profit	£44,000	-£15,000
Vessel length (m)	16	14
Power (kW)	191	137
Volume landed (Tonnes)	101	29
Days at Sea	184	137
Volume per day at sea (Tonnes per day)	0.55	0.21

Table 3.18 Characteristics of the most profitable quarter and the least profitable quarter, 2007 WoS nephrops single rig trawl over 10m (Scottish vessels)

Average per boat for:	Most profitable quarter	Least profitable quarter
Fishing income	£503,000	£158,000
Net Profit	£82,000	-£39,000
Vessel length (m)	18	16
Power (kW)	307	214
Volume landed (Tonnes)	186	70
Days at Sea	201	172
Volume per day at sea (Tonnes per day)	0.92	0.41

Table 3.19 Characteristics of the most profitable quarter and the least profitable quarter, 2007 WoS nephrops twin rig trawl over 10m (Scottish vessels)

Average per boat for:	Most profitable quarter	Least profitable quarter
Fishing income	£133,000	£24,000
Net Profit	£48,000	-£16,000
Vessel length (m)	9.8	9.6
Power (kW)	133	111
Volume landed (Tonnes)	53	9
Days at Sea	121	116
Volume per day at sea (Tonnes per day)	0.44	0.08

Table 3.20 Characteristics of the most profitable quarter and the least profitable quarter, 2007 Pots and traps between 9 and 9.99m (Scottish vessels)

	Most profitable quarter		Segment		Least profitable quarter	
	Average (£)	% of Earnings	Average (£)	% of Earnings	Average (£)	% of Earnings
Fishing Income	356,200		182,500	96%	76,800	
Non-Fishing Income	13,500		6,900	4%	2,900	
Total Earnings	**369,700**		**189,400**	**100%**	**79,700**	
Fishing Expenses						
Commission	15,300		7,900	4%	3,300	
Harbour Dues	13,100		6,700	4%	2,800	
Subscriptions & Levies	6,700		2,700	1%	900	
Shore Labour	1,200		600	0%	300	
Fuel and Oil	43,400	12%	26,000	14%	17,300	22%
Boxes	3,000		1,600	1%	700	
Ice	2,700		1,400	1%	600	
Crew Travel	2,200		1,800	1%	1,500	
Food Stores	6,100		3,700	2%	2,400	
Quota Leasing	3,200	1%	2,600	1%	2,100	3%
Days Purchase	0		n/a	n/a	0	
Other Expenses	3,100		2,600	1%	2,100	
Crew Share	108,600	29%	55,700	29%	23,400	29%
Total Fishing Expenses	**208,800**	**56%**	**113,300**	**60%**	**57,400**	**72%**
Vessel Owner Expenses						
Insurance	10,700		7,800	4%	6,800	
Repairs	22,200		18,100	10%	14,500	
Gear	12,900		10,500	6%	8,400	
Hire and Maintenance	9,100		5,500	3%	3,600	
Other Vessel Owner Expenses	8,900		6,400	3%	5,600	
Total Vessel Owner Expenses	**63,800**	**17%**	**48,300**	**26%**	**38,900**	**49%**
Total Expenses	**272,600**	**74%**	**161,600**	**85%**	**96,300**	**121%**
Profit (operating)	**97,100**	**26%**	**27,800**	**15%**	**-16,500**	**-21%**
Depreciation	10,400		3,900	2%	1,800	
Interest	13,300		5,000	3%	2,300	
Net Profit	**73,400**	**20%**	**18,900**	**10%**	**-20,600**	**-26%**

Table 3.21 Average cost structure - NS nephrops single rig trawl over 10m (Scottish vessels)

	Most profitable quarter		Segment		Least profitable quarter	
	Average (£)	% of Earnings	Average (£)	% of Earnings	Average (£)	% of Earnings
Fishing Income	784,800		531,500	97%	262,500	
Non-Fishing Income	21,000		14,300	3%	7,000	
Total Earnings	**805,900**		**545,700**	**100%**	**269,500**	
Fishing Expenses						
Commission	38,300		25,900	5%	12,800	
Harbour Dues	28,100		19,000	3%	9,400	
Subscriptions & Levies	9,300		6,400	1%	2,700	
Shore Labour	2,700		2,000	0%	1,000	
Fuel and Oil	107,200	13%	90,400	17%	60,900	23%
Boxes	8,900		6,400	1%	3,300	
Ice	8,800		6,300	1%	3,300	
Crew Travel	3,700		3,200	1%	2,600	
Food Stores	8,900		7,500	1%	5,100	
Quota Leasing	8,400	1%	7,300	1%	5,800	2%
Days Purchase	0		n/a	n/a	0	
Other Expenses	8,800		7,600	1%	6,100	
Crew Share	219,100	27%	148,400	27%	73,300	27%
Total Fishing Expenses	**452,200**	**56%**	**330,500**	**61%**	**186,300**	**69%**
Vessel Owner Expenses						
Insurance	23,400		22,400	4%	19,400	
Repairs	56,700		49,200	9%	39,200	
Gear	24,900		21,700	4%	17,200	
Hire and Maintenance	8,600		7,300	1%	4,900	
Other Vessel Owner Expenses	16,200		15,500	3%	13,500	
Total Vessel Owner Expenses	**129,900**	**16%**	**116,200**	**21%**	**94,200**	**35%**
Total Expenses	**582,200**	**72%**	**446,700**	**82%**	**280,400**	**104%**
Profit (operating)	**223,700**	**28%**	**99,000**	**18%**	**-10,900**	**-4%**
Depreciation	29,800		14,200	3%	2,600	
Interest	17,200		8,200	2%	1,500	
Net Profit	**176,700**	**22%**	**76,600**	**14%**	**-15,000**	**-6%**

Table 3.22 Average cost structure, 2007 - NS nephrops twin rig trawl over 10m (Scottish vessels)

	Most profitable quarter		Segment		Least profitable quarter	
	Average (£)	% of Earnings	Average (£)	% of Earnings	Average (£)	% of Earnings
Fishing Income	253,500		156,200	99%	72,000	
Non-Fishing Income	2,500		1,600	1%	700	
Total Earnings	**256,100**		**157,700**	**100%**	**72,700**	
Fishing Expenses						
Commission	9,100		5,600	4%	2,600	
Harbour Dues	5,100		3,100	2%	1,400	
Subscriptions & Levies	3,300		1,800	1%	700	
Shore Labour	900		600	0%	300	
Fuel and Oil	26,800	10%	20,700	13%	14,500	20%
Boxes	2,000		1,300	1%	600	
Ice	2,100		1,300	1%	600	
Crew Travel	1,300		1,200	1%	1,000	
Food Stores	5,400		4,200	3%	2,900	
Quota Leasing	1,000	0%	900	1%	800	1%
Days Purchase	0		0	0%	0	
Other Expenses	3,400		3,000	2%	2,500	
Crew Share	79,600	31%	49,000	31%	22,600	31%
Total Fishing Expenses	**140,100**	**55%**	**92,700**	**59%**	**50,400**	**69%**
Vessel Owner Expenses						
Insurance	7,300		6,300	4%	5,400	
Repairs	17,600		15,700	10%	13,100	
Gear	12,300		11,000	7%	9,100	
Hire and Maintenance	6,300		4,900	3%	3,400	
Other Vessel Owner Expenses	5,200		4,400	3%	3,900	
Total Vessel Owner Expenses	**48,700**	**19%**	**42,200**	**27%**	**34,900**	**48%**
Total Expenses	**188,800**	**74%**	**135,000**	**86%**	**85,300**	**117%**
Profit (operating)	**67,300**	**26%**	**22,700**	**14%**	**-12,600**	**-17%**
Depreciation	15,100		5,900	4%	1,800	
Interest	8,400		3,300	2%	1,000	
Net Profit	**43,800**	**17%**	**13,500**	**9%**	**-15,400**	**-21%**

Table 3.23 Average cost structure, 2007 - WoS nephrops single rig trawl over 10m (Scottish vessels)

	Most profitable quarter		Segment		Least profitable quarter	
	Average (£)	% of Earnings	Average (£)	% of Earnings	Average (£)	% of Earnings
Fishing Income	503,000		295,100	98%	157,900	
Non-Fishing Income	9,600		5,600	2%	3,000	
Total Earnings	**512,500**		**300,700**	**100%**	**160,900**	
Fishing Expenses						
Commission	21,100		12,400	4%	6,600	
Harbour Dues	11,600		6,800	2%	3,600	
Subscriptions & Levies	9,000		4,100	1%	1,600	
Shore Labour	1,700		1,200	0%	700	
Fuel and Oil	81,600	16%	59,700	20%	47,100	29%
Boxes	7,100		4,700	2%	2,700	
Ice	6,500		4,300	1%	2,400	
Crew Travel	0		n/a	n/a	0	
Food Stores	10,400		7,600	3%	6,000	
Quota Leasing	6,900	1%	6,300	2%	5,900	4%
Days Purchase	0		0	0%	0	
Other Expenses	9,300		8,600	3%	7,900	
Crew Share	141,800	28%	83,200	28%	44,500	28%
Total Fishing Expenses	**306,900**	**60%**	**199,000**	**66%**	**129,000**	**80%**
Vessel Owner Expenses						
Insurance	12,800		10,700	4%	9,300	
Repairs	33,100		30,600	10%	28,300	
Gear	10,400		9,600	3%	8,900	
Hire and Maintenance	17,300		12,600	4%	10,000	
Other Vessel Owner Expenses	12,200		10,200	3%	8,900	
Total Vessel Owner Expenses	**85,800**	**17%**	**73,700**	**25%**	**65,500**	**41%**
Total Expenses	**392,700**	**77%**	**272,700**	**91%**	**194,500**	**121%**
Profit (operating)	**119,800**	**23%**	**28,000**	**9%**	**-33,600**	**-21%**
Depreciation	21,000		7,200	2%	3,000	
Interest	17,100		5,900	2%	2,400	
Net Profit	**81,800**	**16%**	**14,900**	**5%**	**-39,000**	**-24%**

Table 3.24 Average cost structure, 2007 - WoS nephrops twin rig trawl over 10m (Scottish vessels)

	Most profitable quarter		Segment		Least profitable quarter	
	Average (£)	% of Earnings	Average (£)	% of Earnings	Average (£)	% of Earnings
Fishing Income	157,400		83,200	97%	23,700	
Non-Fishing Income	5,700		3,000	3%	900	
Total Earnings	**163,100**		**86,200**	**100%**	**24,600**	
Fishing Expenses						
Commission	3,900		2,100	2%	600	
Harbour Dues	3,500		1,800	2%	500	
Subscriptions & Levies	1,000		500	1%	100	
Shore Labour	2,000		1,100	1%	400	
Fuel and Oil	13,300	8%	10,600	12%	6,700	27%
Boxes	700		400	0%	100	
Ice	2,100		1,200	1%	400	
Crew Travel	600		500	1%	400	
Food Stores	2,800		2,200	3%	1,400	
Quota Leasing	100	0%	100	0%	0	0%
Days Purchase	0		n/a	n/a	0	
Other Expenses	5,000		4,300	5%	2,900	
Crew Share	41,200	25%	21,800	25%	6,200	25%
Total Fishing Expenses	**76,300**	**47%**	**46,600**	**54%**	**19,800**	**80%**
Vessel Owner Expenses						
Insurance	3,800		3,400	4%	3,200	
Repairs	8,000		6,900	8%	4,700	
Gear	5,500		4,700	5%	3,200	
Hire and Maintenance	4,300		3,400	4%	2,200	
Other Vessel Owner Expenses	3,400		3,100	4%	2,900	
Total Vessel Owner Expenses	**25,000**	**15%**	**21,600**	**25%**	**16,300**	**66%**
Total Expenses	**101,300**	**62%**	**68,200**	**79%**	**36,100**	**147%**
Profit (operating)	**61,700**	**38%**	**18,000**	**21%**	**-11,600**	**-47%**
Depreciation	13,800		5,500	6%	2,600	
Interest	4,400		1,800	2%	800	
Net Profit	**43,500**	**27%**	**10,800**	**13%**	**-15,000**	**-61%**

Table 3.25 Average cost structure, 2007 – Demersal trawl between 9 and 9.99m (Scottish vessels)

	Segment	
	Average (£)	% of Earnings
Fishing Income	73,300	99%
Non-Fishing Income	1,000	1%
Total Earnings	**74,200**	**100%**
Fishing Expenses		
Commission	100	0%
Harbour Dues	500	1%
Subscriptions & Levies	200	0%
Shore Labour	100	0%
Fuel and Oil	6,200	8%
Boxes	n/a	n/a
Ice	400	1%
Crew Travel	500	1%
Food Stores	1,500	2%
Quota Leasing	0	0%
Days Purchase	n/a	n/a
Other Expenses	6,500	9%
Crew Share	17,400	23%
Total Fishing Expenses	**33,500**	**45%**
Vessel Owner Expenses		
Insurance	2,200	3%
Repairs	5,700	8%
Gear	4,200	6%
Hire and Maintenance	2,400	3%
Other Vessel Owner Expenses	5,700	8%
Total Vessel Owner Expenses	**20,200**	**27%**
Total Expenses	**53,700**	**72%**
Profit (operating)	**20,600**	**28%**
Depreciation	6,100	8%
Interest	1,700	2%
Net Profit	**12,800**	**17%**

Table 3.26 Average cost structure, 2007 – Pots and traps between 9 and 9.99m (Scottish vessels)

3.3 Markets for the Catch

The following information from Seafood Scotland and Seafish was presented to attendees at the event.

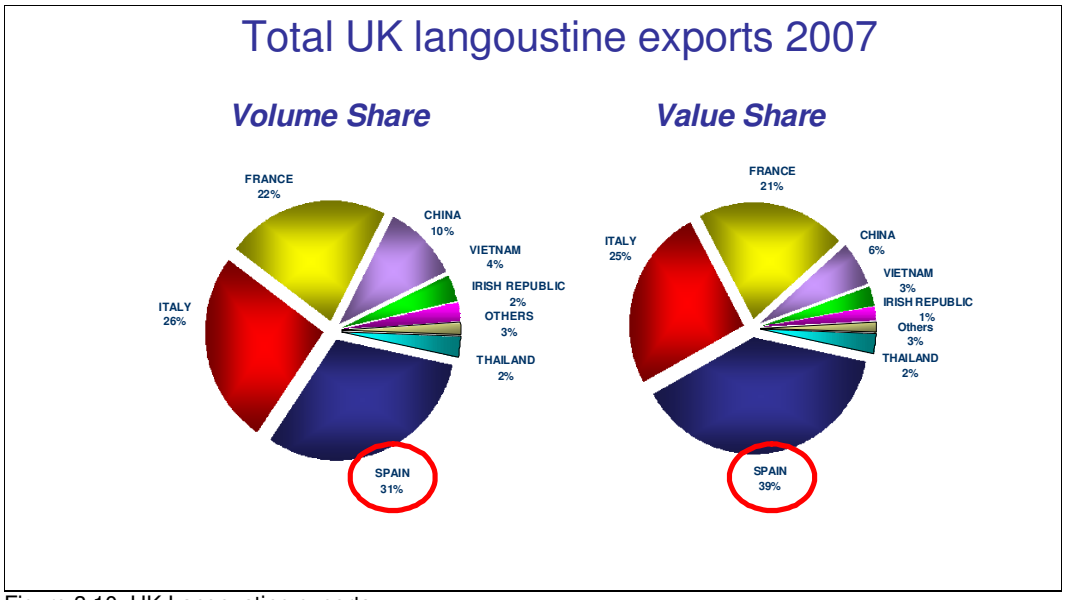


Figure 3.10 UK Langoustine exports.

Figure 3.11 Markets for products from nephrops

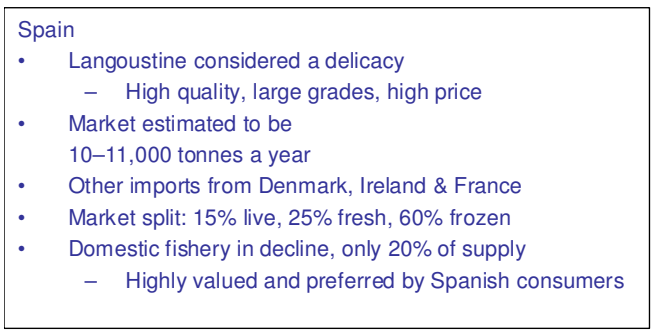


Figure 3.12 Spanish market for nephrops

Italy
- Market estimated to be 13,000 – 14,000 T per year
  - 5,000 tonnes fresh/live
  - No differentiation between live and “extra-fresh”
  - 9,000 tonnes frozen
  - Market predominantly satisfied through imports
    - 4,000 T landed from domestic fishery in Adriatic
    - Paler colour langoustine, verging on white
  - Local is seen as best
  - 69% consumers eat fish/shellfish once or twice a week

Figure 3.13 Italian market for nephrops

France
- Market estimated to be 16,000 tonnes per annum
  - 3,500 tonnes live
  - 1,000 frozen
  - 12,500 fresh (including cooked chilled)
- Brittany fishery for “live”
  - Located on West Coast
  - Seasonal: April-August
  - Trawled
  - Land 3,000 T of “live” from total French catch of c.7,000 T
  - Local markets and Paris
  - Starting to develop new techniques and markets

Figure 3.14 French market for nephrops

Emerging markets
- Russia
- Far East
- Middle East

Figure 3.15 Emerging markets for nephrops

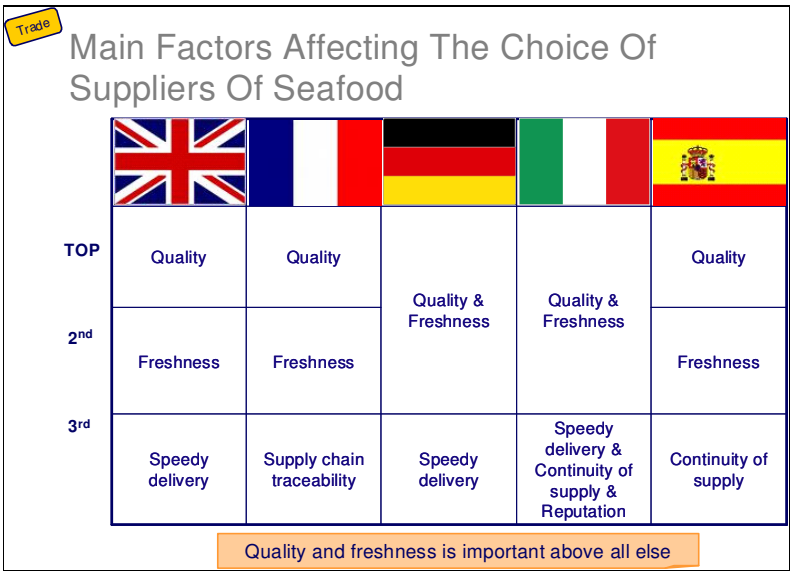


Figure 3.16 Factors affecting buyers' choice of supplier

3.4 Nephrops event, Fort William, findings and analysis

This section sets out the findings from the consultation event held on 23rd January 2009. The results reported here are from an event which drew together participants from the west coast fleet, including mobile gear and static gear operators.

3.4.1 Current Conditions, Opportunities and Challenges

Table 3.27, Table 3.28 and Table 3.29 provide a summary of current conditions, opportunities and challenges identified by attendees at the event. Following analysis, the findings have been grouped under the following headings:

- Product and Prices,
- People,
- Fisheries Management
- Fleet Operation,
- Access to the Fishery and Stocks
- Onshore Sector - Processing,
- Onshore Sector – Other, and
- Market Demand.

What works well? What are our Opportunities?	What doesn't work well? What challenges do we face?
Product and Prices	
• High quality product from west coast (clean water, size, pink colour, good traceability) Much of the catch is landed fresh (i.e. daily) • West coast static gear catch is a premium product (generally average price paid to creelers is higher) • Creeling is considered to be profitable (lower volume landed but usually can secure better prices) • Catch is well cared for on the boats (stored well, most use no chemicals) • Good relationship between creelers and processors	• Lack of clarity between different quality products (mixing devalues high quality products) • Price achieved does not recognise high quality of west coast nephrops (and from static gear in particular) • Same prices are paid for 1 day vs 3-4 days old catch (poor link between price and quality) • Dramatic price variations (daily, weekly); not in fishermen's control • Tails may be bought as lower quality product (adverse impact on consumer perception of species) • Large discrepancy between price paid to fishermen and retail price (supermarket, restaurants) • Cold stores 'constantly' full due to large boats landing very large catches – depresses prices and processors reluctant to purchase
People	
• Fishery helps to keep money and families in the local communities.	• Young people do not consider fishing for employment or business • West coast does not have a stronger voice raising issues or in negotiations (east coast dominant) • No collective action amongst creelers (tendency for boats to work in isolation); no formal organisation
Fisheries Management	
	• No overall management of fishery – current effort not matching grounds or stock levels; too easy to over-fish (e.g. no limits on number of creels) • Regulators too distant (top-down decisions) – heavy burden of non-relevant regulations / paperwork • Too many / too frequent changes in rules & regulations about catching • Lack of access to quota (non-nephrops) (inshore fleet losing out; limiting diversification) • Lots of participation in consultations (spend time, lose income but nothing changes)

Table 3.27 SWOT analysis output from Nephrops Sector Event (section a)

What works well? What are our Opportunities?	What doesn't work well? What challenges do we face?
Fleet Operation	
• Creeling has a good sustainability image e.g. lower carbon footprint than mobile gear • West coast nephrops sector is willing to be flexible (e.g. change species or possibly fishing grounds) (although creelers thought to be less adaptable)	• Too many large boats (some from the east coast) working inshore on west coast; putting too much effort on prawns (also fills cold stores – see product and prices above) • Vessels too old on average, and expensive to run • Inadequate or outdated storage facilities on some boats limit quality / value that can be achieved for the landed product • Profit margins for nephrops are decreasing • Difficult to get loyal / trained crew (especially local) • Problem paying good wages (competing with Scottish oil & gas sector) • Evidence of dangerous practices and incompetent fishing (giving sector a bad name)
Access to Fishery and Stocks	
• Nephrops are prolific 'breeders' and there are currently no problems with stock levels • Good access to west coast fishing grounds – close into shore and sheltered (reduces steaming time and associated costs)	• Increase in parasite population (potential to lower stocks) • Low barriers to entry for creelers so new entrants appear when price goes up (no specific licence needed) • Uncertainty due to threat of closure or increasingly restricted areas through environmental designations
Onshore sector - processing	
• Good access to processor anables small catches to be landed (fresh, daily) (small number of processors on west coast; east processors send vans to collect west coast catch) • Good relationship between creelers and processors, with shared understanding of market needs (landing on Monday morning rather than Friday in order to suit needs of Spanish market)	• Too few registered buyers on the west coast, and not enough competition between the current ones (keeps prices low) • Prices not know ahead of landing catch (and often not for a few days after); lack of transparency and no opportunity to discuss buying price • Poor communications between fishermen and processors (no trust and don't work together to reach best markets and share profits) • Perception that processors are not looking for new (higher value) markets • Handling on the pier (weighing, counting) breaks the cool chain and comprises maximum freshness

Table 3.28 SWOT analysis output from Nephrops Sector Event (section b)

What works well? What are our Opportunities?	What doesn't work well? What challenges do we face?
Onshore sector – other	
• Certain areas on west coast have good infrastructure	• Some areas of west coast very poorly serviced with infrastructure (leads to problems for fuel supplies, maintenance, etc) • Overheads are up but prices stay the same (but retail price also up) e.g. Cost of bait (for creelers) - only one supplier of bait in Scotland; fuel prices
Market Demand	
• Niche market (unlikely to collapse), particularly live nephrops • Live market - next day is a new market • Under-served Scottish and UK markets	• Processors perceived to have poor understanding of the product and do not present it well to their customers and markets • Scottish fleet has heavy reliance on export markets; low awareness of local consumers / market • UK market relies on imports and farmed products (mainly frozen) • Current UK market demand for fresh langoustines is low; perceived as relatively inaccessible, premium product (for high end eating out rather than at home)

Table 3.29 SWOT analysis output from Nephrops Sector Event (section c)

3.4.2 Priority Areas and Proposed Actions

The consultation event raised a large number of issues on which attendees had strong opinions. They were invited to vote on which of these they considered to be a priority, covering both opportunities that could be built on and challenges for which solutions need to be found. However, because many of the issues were inter-linked, the analysis has grouped the findings under four overarching priority areas:

1 Management of the fishery;

2 Vessel – Buyer relationship and more transparent prices;

3 Product and market development; and

4 Fleet renewal.

The remainder of this section describes each of these priority areas in turn. Within each priority area the actions proposed during the event are listed.

3.4.2.1 Management of the Fishery

All breakout groups identified the need for better management of the fishery as a priority, and also indicated this issue was closely related to the need for broader improvements in management across other west coast fisheries. Discussions mainly focused around the need for clearer, tighter and more constant rules and regulations within the fishery

(particularly the number of licences), and highlighted a wide range of specific issues. These can be summarised as:

- There is too much activity in the fishery, with insufficient regulation on creel numbers;
- Significant uncertainties related to pressure from environmental groups and potential new environmental designations leading to closed or increasingly restricted areas;
- The need to attain MSC status for the west coast nephrops fishery and more of the west coast fisheries;
- Too many large vessels have access to the fishery, particularly the Minches; and
- Not enough restrictions on the type of gear that can be used in certain areas.

Attendees felt that the current management regime for the fishery creates a situation where there is potential for putting more pressure on the stocks than is ideal and for supplying the market at a rate that depresses prices. Too many vessels have licences that allow them to be active in the fishery – attendees in particular mentioned vessels from the east coast and other European countries. These vessels have quota for other species but also fish for nephrops. Lack of monitoring or enforcement also leaves the sector open to dangerous practices – e.g. one vessel shoots over the top of another – and careless or even incompetent fishing. Attendees felt that this could ultimately reduce or destroy the value of the sector, and would only get worse if the cut-throat practices of some individual businesses trying to succeed at the expense of others were left uncontrolled.

Those responsible for regulating the fishery are seen as being distant from the fishermen, their businesses and the day-to-day aspects of the nephrops sector. Too much regulation is top-down and does not take into account the extensive knowledge held by the fishermen, their experience and potential to provide solutions, and the current situation (e.g. actual health of the stocks). Concern was expressed that nephrops fishermen are over-burdened by non-relevant regulation and paperwork e.g. restrictions on days at sea in the cod recovery zone when the majority of nephrops vessels rarely catch any cod (most said that they never see cod in their catch), and the complexity of the additional days at sea derogations.

The attendees felt that there were too many changes to the rules and regulation governing catching. The December Council agreement also creates a high degree of uncertainty, and the period between decisions and expected implementation is often too short for the fishermen to respond effectively (and at the same time maintain their profitability).

There was wholehearted support for maintaining the long term sustainability of the fishery – the fishermen clearly recognise the benefit to their businesses of continuing to fish in a sustainable and responsible manner. Many have been involved in trials of new gear technology and have taken on new measures (e.g. using different mesh sized and trawl designs) aimed at reducing discards. The strength of the environmental lobby means that there is a continuous uncertainty around whether there will be closed or increasingly restricted areas created through environmental designations. Past evidence suggested that vested interests can lead to the closure of areas and the precautionary approach is always adopted – the voice and experience of the fishermen are often not taken account of in these decisions although the outcomes may have severe implications for their livelihoods. It was considered that the closure of some areas just concentrates fishing in other areas and creates more damage there - effort is just displaced elsewhere not reduced in real terms.

Attendees were in favour of gaining MSC certification for the fishery. They felt that the west coast fisheries are capable of meeting the requirements for MSC in terms of management and traceability (the latter being substantially in place). MSC could offer considerable advantages in terms of market recognition (develop a specific brand around this) and achieving higher prices.

Large vessels (>20m) are considered to be adversely impacting the fishing grounds and the prices achieved for nephrops catches landed on the west coast. Their nets can be 6-7 times bigger than those of smaller boats, and as a result they are able to haul very large catches. Many of these larger vessels were displaced from the West of Scotland deepwater fishery when those access rights were lost to the French (around 2002). Others are from east coast ports or from European countries (e.g. Spain). These larger boats are able to work in all weathers and are thus able to continue fishing in bad weather when smaller boats have to be tied up.

The landing of such large volumes in a single catch has a number of knock-on effects that act to depress the prices achieved for landings from all boats. Cold stores remain full for longer periods and as a result processors either pay much lower prices or may not be in a position to buy the catches that have been landed. Historically periods of bad weather used to empty the cold stores and allow stocks to recover – the prices paid by processors were generally higher when the cold stores needed to be filled. Large vessels are not affected by weather and continue to land their catches. As a result, prices have remained low and are relatively stable throughout the year.

Within the nephrops sector, some felt that the use of static gear (creels, pots) has a more sustainable image. Creelers tend to catch the larger nephrops and these are generally of a higher quality due to their size and lower amount of handling (and damage). The attendees (including the creel vessel owners themselves – two discussion groups) considered that it is too easy to over-fish. The number of creels that can be laid by an individual boat or in a particular area is not limited. In addition as no specific licence is needed for creeling, it is relatively easy to enter this sector. New entrants have been known to move in when the price rises, intensively fish for a short period, make “good money” and then leave when the price falls. Overall this has an adverse impact on the profit margins of vessels and businesses that remain in the nephrops sector for the long term.

In suggesting restrictions such as those above, attendees were also mindful of the need to avoid the development of a ‘closed shop’. Any proposed system and its specific rules and regulations must provide room for new entrants / young people (but based on merit not wealth, size of vessel or influence).

Many different actions were proposed under this priority area; these comprise suggestions related to improving the overall management system and others that offer solutions to individual challenges that were identified. The remainder of this section discusses the proposed actions in turn.

Action One: Assess approaches used in other areas and ensure that lessons learned are incorporated in future management systems for the fishery

There is a huge amount of research and practical experience available as input to future management plans, not least of which lies within the fishing sector and with the fishermen themselves. Various schemes have been implemented in other areas off Scotland and the UK, and in many cases the outcomes will have been evaluated in detail.

Shetland Shellfish Management Organisation (SSMO), which was established to maintain and improve Shetland's shellfish fisheries, was cited as an example of local regulation and management. The SSMO is a non-profit making company with representation from the local fishermen's association and other Shetland fishing and community groups. It is the first local group in the UK to be given delegated authority as part of a Regulatory Order to govern their own inshore fishery. Information of the success or otherwise of this approach could inform the design of new systems for areas of the Scottish west coast inshore fisheries.

Action Two: Stop or restrict access by large (>20m) vessels to the fishery

Attendees indicated that there is an urgent need to consider the size of vessels allowed in the fishery and the impact (on stocks and nephrops businesses) of their catch volume. Other issues raised related to whether the boats were local or 'nomadic' (large) boats. Specific restrictions need to be developed for vessels fishing on the west coast and for the nephrops sector in particular. This could be based on length, tonnage, HP, etc or on a combination of these. One suggestion was to make a national rule to prevent bigger boats working in the Minches. There was general support for the idea of more people and more boats doing less damage to the stocks as opposed to a few, big efficient boats which are considered much more likely to damage the ecosystem and stocks (by very large catches being taken).

Action Three: Improve management of licences (both static and mobile gear)

This action would aim to ensure that inactive vessels did not hold onto licences once they had left the sector or fishery, by removing these licences from the fleet. The proposal was that nephrops licences should be capped so that they are not transferable i.e. when a boat leaves the fishery, the licence goes back to the pool and becomes available to a new entrant (who meets the requirements and agrees to be active in the fishery). The main disadvantage of this action is that is creates risk for the existing fleet as current operators / owners may feel pressured to remain operational through fear of losing their licence. This also put additional pressure on stocks as boats may fish when they would otherwise have decided to stay ashore.

Action Four: Restrict the type of gear that can be used in certain areas

This action is focused primarily on the areas fished by creelers and one suggestion was that any restrictions should be based around local solutions i.e. the specific requirements may vary from one area to another. It was considered that Inshore Fisheries Groups may be able to help in organising and facilitating these discussions however care would need to be taken to ensure that the views of creel boat operators / owners were taken into account as they are likely to be in the minority in these groups. Various suggestions were made in terms of specific measures that could be introduced, these included:

- Banning mobile gear in certain areas (particularly coastal zones)
- Restricting the number of creels that can be set in an area e.g. 20,000 – 25,000 in an area
- Local limits for number of creels related to the boat (possibly on size, crew) i.e. the boat must be capable of laying this number and retrieving them effectively
- Allow access to grounds on the basis of custom and practice (history of fishing, track record) whilst also ensuring opportunities for young entrants
- Define access to volume based on the capacity of the boat / crew

Action Five: Create no take zones or protected areas (possibly rotating)

No-take zones or protected areas act as a fishery management tool by reducing the overall fishing mortality. They may be set up to protect certain species and aim to improve the overall sustainability of the fishery. Several no take zones have been established in Europe including the Norway pout box, mackerel and plaice boxes or boxes that protect spawning herring. Examples of protection measures include closing the areas on a seasonal basis, limiting the types and size of vessels that can operate in the area and restricting the type of gear that can be used. No take zones need to be carefully designed to ensure that they target and protect the species in question, at a specific stage of its life cycle if appropriate.

Action Six: Enable nephrops vessels to diversify into new fisheries

Many of the vessels operating in the nephrops sector are capable of responsibly fishing for other species at the same time as fishing for nephrops. This could increase their activity and therefore the profitability of their businesses (as the same running costs would potentially deliver greater turnover and return). Attendees felt strongly that there were opportunities in other fisheries that they should be given access to; these included:

- Redistribution of pelagic quotas, especially herring and mackerel, to inshore / west coast boats; here the suggestion was that the Mallaig and NW Fishermen's Association could lobby the Pelagic Association to release quota (particularly that which is not being used); the Inshore Fisheries Group may also have a role to play particularly in lobbying the Scottish Government
- Develop new fisheries e.g. line caught mackerel; through diversification, this would act to take pressure of the prawn stocks on the west coast

Action Seven: Increase the level of organisation within the nephrops sector

This is an overarching action which is not only to relevant to this priority area but also the following one on improving the vessel-buyer relationship.

A recurring issue raised during the discussions in all groups was the need for the nephrops sector and in particular the west coast fleet to have stronger representation in fishermen's associations and in the various negotiations. Attendees indicated that the fleet has no control over management or marketing, and that there is a need to raise the profile of the challenges being faced by vessels from the west coast, and possibly also by specific areas and communities. There was a general feeling that east coast 'voice' is louder than the west and therefore their concerns and solutions dominate discussions. It is clear that there is a desire amongst vessel owners / operators for the sector (and the region) to become more organised and to be able to more effectively present their views to the government and processors. However, the route through which this could occur was not immediately obvious and therefore one possibility may be the establishment of a new association specifically focused on the west coast / nephrops.

Each of the above actions under this priority heading would contribute to the development of a long term management plan for nephrops. This would increase business stability and improve confidence for long term planning (which the current frequent rules changes hinder).

3.4.2.2 Vessel-Buyer Relationship and More Transparent Prices

The second priority area identified from the analysis of the event findings is the current relationship between vessels and the on-shore buyers and/or processors. This was a common theme of the discussions with vessel operators and focused on the lack of visibility

that they have of how the catch is handled once it is landed to the processor, and how this situation may be improved.

In general, attendees indicated that the current level of communication between the vessel owners / operators and the processors is very poor, and this is the root cause of a lot of their problems. There is no understanding of each others needs and position. Achieving a low price for their products, and in particular one that does not reflect the true quality of the landed catch, is reducing profit margins in the face of higher operating costs. There is no trust and the two sides are not working together to identify and reach the best markets and then to share the additional profit i.e. for mutual benefit.

Unlike whitefish species, nephrops is not generally sold through auction. The typical way of selling is to hand the catch over to a processor who later reports back on how much had been packed out, tailed or thrown out as waste. These aspects are not visible to the vessel owner and there is no easy way to verify what the processor is indicating – no transparency. The vessels do have an alternative and can land to a factory agent (currently operating in Mallaig, Oban, Tarbet and Campbelltown) where the catch is weighed at the quayside. Most vessels develop a long term arrangement with one or several processors and tend to remain loyal to them; changing processors presents a significant risk to the business.

Attendees identified that the quality and nature of their catch was of value but that potential value was not being recognised or realised in terms of a price differential for higher quality products.

The main issues raised were:

- West coast lands a high quality, fresh product (especially from creels and pots) that has a known provenance and, in the majority of cases, has been fished in a responsible manner with a keen regard for sustainability;
- Vessels are not getting paid a good price (current prices are very low in relation to few years ago; no seasonally higher prices e.g. at Christmas);
- The option to move away from carapace length (EU regulation) as the measure of minimum landing size (MLS) for tails to using count / key;
- No price differential for quality (higher quality is not translated into higher prices); one comment suggested that 'there is no use landing live nephrops if this quality is not transmitted to the end customer' or if there is no price difference between langoustines which are 1 day or 3-4 days after catching; and
- No transparency of how prices, weights etc are derived, in the processes used for handling and marketing of the product (the last the vessel sees of the catch is as it passes to the processors transport) or in the relationship between retail prices paid and the price paid to fishermen.

Action Eight: Building trust and understanding - develop closer integration along the whole value chain but especially between fishing and processors

It is clear from the discussion that there needs to be more communication and better quality understanding between the vessel owners and operators and those buying their catches. There is an opportunity to create an initiative or forum focused on west coast nephrops which would enable mutual sharing of information on practical operations, needs and the basis of decisions being made (particularly around prices and market requirements). If fishermen understand more about the needs of particular markets (and the quality specification priorities), they may be able to adapt their practices to better deliver these products. Being

able to see what the costs and earnings of the processors are would also help to provide insight into the gap between the price paid and the retail price.

As mentioned above under Action Eight, better organisation of the nephrops sector would provide a route through which more formal discussions could be conducted and under which binding agreements could be made, should these be appropriate. Such an organisation could also encourage and facilitate joint meetings. Seafish and Seafood Scotland may also have a role to play in improving communications between the two parties.

Action Nine: Differentiate the final product

Different markets require different products however, many of the attendees commented that they did not know the quality needs of the markets into which their processors were selling their catches. There appears to be great potential for the nephrops products to be more differentiated e.g. by method of catching, through the development of an individual brand or achievement of certification for the highest quality products (e.g. creel caught nephrops).

The attendees felt that there was an opportunity to separate out west coast nephrops as a premium product, which would command a higher retail price. They mentioned this specifically because they believe that some processors that are collecting catches from the east and west coasts, use the same transport making it more difficult and time consuming to keep the consignments separate. At the factory these are simply treated as one 'batch'. A high probability of achieving a good price would provide incentives for both parties to separate out the higher quality nephrops (biggest / freshest) and maintain this separation through the value chain to create a differentiated end product.

An excellent example of how better understanding of the market needs can be the basis of a mutually beneficial agreement is the good relationships that has developed between processors and creelers. Landings are now brought ashore on Monday morning rather than Friday in order that the freshest products are available for the Spanish market at just the right time to meet the requirements of their consumers.

Identifying markets that will consistently deliver a better price for the highest quality is likely to be a longer term action and will need to be underpinned by considerable market research, and product and market development (see third priority area below). However getting a fair (and premium) price for the freshest product would incentivise vessels and crews to continue to land on a daily basis and to invest in making improvements to onboard storage, handling and boxing equipment and processes. The processor would also be motivated to actively seek out well defined markets for these products, ones where the quality specifications are differentiators in the eyes of the consumer. Action Eight aimed at building trust and understanding between the fishing vessels and processors (and indeed in some cases the retail sector e.g. high end restaurateurs) is also crucial in this regard.

Action Ten: Facilitated visits to processing factories

There was strong support amongst all attendees for an opportunity to learn more about the practical aspects of how the products are processed and prepared for the retail market (both home and exports). Facilitated factories visits with discussion sessions were considered to be an excellent idea. These could include explanations of how the count is done, what matters for the product, where the product is going, what the quality specifications are, what more the processors could achieve by way of product development and marketing if they could access better quality product. This would also give the fishermen an opportunity to introduce some of their own ideas. A further area of discussion could be the development of a mechanism to enable the vessels to get a return on their investment in quality. Individual vessels may still wish to negotiate specific deals with processors however it may also be possible that a group of vessels could work together or that a standard mechanism favoured

by the whole sector could be identified. Seafish and Seafood Scotland were suggested as potential prime movers to implement this action.

3.4.2.3 Product and Market Development

The third priority area identified for the nephrops sector is product and market development. Product and market development covers a wide range of different issues (including fair prices discussed above) and actions. The latter are designed to either improve the reputation of the fishery and therefore the product, generally and in the chosen markets, including the potential to expand UK and Scottish markets, or to raise the profile of Scottish nephrops in new markets. The actions proposed build on the strengths in the nephrops sector and seek to address some of the challenges faced.

Attendees were aware that the quality and nature of their catch was of value to the market, particularly that it is landed fresh, but also knew that this potential high-end value was not being reflected in a price differential for higher quality products. They considered that there was a distinct quality differential between the quality-led catches of the west coast compared to the volume-led approach on the east coast.

They also stated that the fishery has not applied for MSC recognition (even it is perceived as likely to meet the requirements; see above 3.12) and felt that this would become a disadvantage in the near future. There was an indication from a number of attendees that the cost for vessels to achieve accreditation under the Responsible Fishing Scheme for good practice is prohibitively expensive.

The following actions were identified in support of product and market development.

Action Eleven: Develop markets for the highest quality Scottish nephrops

A clear message, coming particularly strongly from the creelers, was that there is a need to encourage and assist processors to make the most of the good fresh products and establish a mechanism for passing a mutually agreed proportion of these high returns back to the fleet (also see Action Nine). This includes 'keeping the live market alive'. Attendees felt that more detailed information was needed on the current and potential markets for Scottish nephrops. Other suggestions for elements in support of this action were:

- Improvements to traceability (where does the product originate from) and the potential to create a local identity based on this
- Quality marks (similar to SQS – Scottish Quality Salmon)
- Shift the focus to consider the whole quality chain so that fishermen are incentivised to invest time and effort in catching a quality product
- New promotional activities to raise awareness of the characteristics of the Scottish brand and to build on this in markets where quality is already a differentiator for consumers, or where other Scottish products do well.

Action Twelve: Strengthen the UK market for seafood

Attendees considered that more market research is required to better understand why consumers in the UK do not eat as much seafood as their European neighbours. It was felt that this was likely to be related to unfamiliarity with and limited knowledge on how to handle large langoustines for eating at home.

There is a significant lack of awareness amongst UK households with regard to the purchase, preparation and eating of larger nephrops, expect perhaps in restaurants or on

holiday. Attendees thought that much more could be done to promote seafood and to 'educate' UK households, and they agreed that the jump needed to go from using frozen scampi to fresh langoustines would probably be too great. This change would need to be made in stages and to work, would need to be supported by 'in-between' products on the market.

Suggestions for specific activities to raise awareness and support an increase in the consumption of nephrops included:

- More targeted advertising (processors / retail outlets, particularly supermarkets)
- Showcase products to the UK market (especially those that can fill the middle grounds between scampi and large fresh langoustines)
- Encourage TV chefs to promote and use langoustines, specifically those from the west coast (e.g. Jamie Oliver supports Shetland Shellfish and uses these in Restaurant 15)
- Seafish to put as much effort into nephrops as they do for fish and chips

Action Thirteen: Move into new expanding export markets

Russia, the Far East and the Middle East have been identified as the most rapidly growing seafood markets. Sources are many and varied and Seafood Scotland have indicated that Scottish nephrops has the potential to become a niche provider. Attendees considered that it was essential to gain more understanding of the specific quality requirements (for fresh and frozen product) of these markets and for this information to be widely disseminated to processors (and vessel operators). It is likely that concerted action by the sector (or possibly the processors / west coast fleet) would be more effective and attendees felt that the product and marketing knowledge within Seafish and Seafood Scotland would be invaluable in defining market segments and developing the strategic approach to the those with the most potential. They thought it might be better for this to be undertaken by a central organisation as this may trigger processors to take action (they have tended to be relatively unwilling to explore new / niche markets as they appear to be getting sufficient returns from their current efforts).

3.4.2.4 Fleet renewal

There was agreement that many boats in the sector are too old, and are expensive in terms of maintenance and have lower fuel efficiency than newer boats. Poor conditions onboard are a factor in terms of poor crew retention and younger crews expect better living and working conditions.

Action Fourteen: Develop a 'scrap and build' scheme

Attendees explained that many operators are not in a position to invest in new vessels as the sector is not profitable enough and they increase their turnover and profit margins because of their current practices (limited by the vessel design and equipment). A 'scrap and build' scheme would assist operators to remove old boats from the fleet and promote the building of new, more modern replacement vessels. Other suggestions included making available favourable loans to encourage investment or grants aimed at renewing the ageing parts of the fleet. The following provides an example of how such as scheme has worked in the Western Isles.

Fisheries Loan Scheme offers financial assistance to young skippers in the Western Isles. The scheme provides loans of up to 40 per cent (maximum of £100,000) through the Royal Bank of Scotland, with the council (Comhairle nan Eilean Siar) acting as guarantor.

Importantly, it helps young fishermen to purchase their first boats and thus enables them to take the place of the older generation who would otherwise be forced to sell their licences to mainland boats on their retirement. The scheme has been recognised for its effectiveness in retaining benefits for the local economy; new entrants have been attracted, including to the Stornoway prawn fleet, and processors have increased the number of local boats among their regular suppliers.

3.4.3 Priority Actions

From the fourteen actions identified above, six were prioritised above the others. The following actions reflect the highest priority actions identified by attendees at the event, in order of priority these were:

Action Two: Stop or restrict access by large (>20m) vessels to the fishery

Action Four: Restrict the type of gear that can be used in certain areas

Action Nine: Differentiate the final product

Action Fourteen: Develop a 'scrap and build' scheme

Action Twelve: Strengthen the UK market for seafood

Action Eight: Building trust and understanding - develop closer integration along the whole value chain but especially between fishing and processors

3.4.4 Summary of the Event Findings

3.4.4.1 Priority Issues

The discussions in the four breakout groups within the event followed the same structure and this allowed different views to be aired. However, overall there was little contradictory information and the same priority areas were identified across the four groups. These issues for the nephrops sector can be summarised under the headings:

1 Management of the Fishery

2 Vessel-Buyer Relationship and More Transparent Pricing;

3 Market and Product Development; and

4 Fleet Renewal.

It is also worth noting that the large number of actions identified under the priority of 'Management of the Fishery' does indeed reflect the importance and urgency that attendees attached to this area. They felt that the need to get this right has profound implications for the ability of individual vessels and businesses to survive and for the long term sustainability of the west coast nephrops sector.

3.4.4.2 Proposed Actions

Table 3.30 summarises all of the actions identified under each of the three priority areas. The table also splits the actions into High, Medium and Low priority in line with the discussions held at the event. It is expected that, in order to assist decision-making, further consultation will be required to assess potential value to the sector and Scotland against likely cost of implementation of the various actions.

Priority Area	Action	Description	Priority
Management of the Fishery	1	Assess approaches used in other areas and ensure that lessons learned are incorporated in future management systems for the fishery	Medium
	2	Stop or restrict access by large (>20m) vessels to the fishery	High
	3	Improve management of licences (both static and mobile gear)	Medium
	4	Restrict the type of gear that can be used in certain areas	High
	5	Create no take zones or protected areas (possibly rotating)	Medium
	6	Enable nephrops vessels to diversify into new fisheries	Medium
	7	Increase the level of organisation within the nephrops sector	Low
Vessel-Buyer Relationship and Transparency of Prices	8	Building trust and understanding - develop closer integration along the whole value chain but especially between fishing and processors	High
	9	Differentiate the final product	High
	10	Facilitated visits to processing factories	Medium
Product and Market development	11	Develop markets for the highest quality Scottish nephrops	Medium
	12	Strengthen the UK market for seafood	High
	13	Move into new expanding export markets	Low
Fleet renewal	14	Develop a 'scrap and build' scheme	High

Table 3.30 Summary of Actions Arising from the Nephrops Sector Event

3.5 Nephrops sector event list of attendees

Name	Organisation / Vessel
1. Craig Burton	Seafood Scotland
2. Allan Cameron	Vessel owner
3. Peter Davidson	Industry Representative
4. Sandy Gordon	Vessel owner
5. Ian Gribbens	Vessel owner
6. Tony Kenning	Vessel owner
7. James Manson	Vessel owner
8. Donnie MacKinnon	Vessel owner
9. Alasdair MacLeod	Vessel owner
10.John MacAlister	Multiple Vessel Owner
11.Hugh MacPherson	Vessel owner
12.Ian MacKinnon	Vessel owner
13.William John McLean	Vessel owner
14.Thomas McLean	Vessel owner
15.Dougie Rolland	Vessel owner
16.Alistair Sinclair	Vessel owner
17.Robert Summers	Vessel owner

4 Demersal Sector

4.1 The Fleet and Fish Stocks

FRS kindly ensured that the study team were aware of the most recent ICES advice. In general, North Sea stocks appear to be much more healthy than west coast stocks. It would seem that it is reasonable to expect that in broad terms, the situation in the North Sea may continue to improve slowly and that the situation on the west coast will require stringent restrictions on fishing activity to allow stock recovery.

In the North Sea, the regulations aiming to limit discards may have more impact on fishing opportunities than stock size over the next several years.

Figure 4.1 shows the location distribution of demersal species catches by Scottish vessels. It is clear that the northern North Sea is the area which delivers the largest volume and also noteworthy how far Scottish vessels travel to catch their quotas.

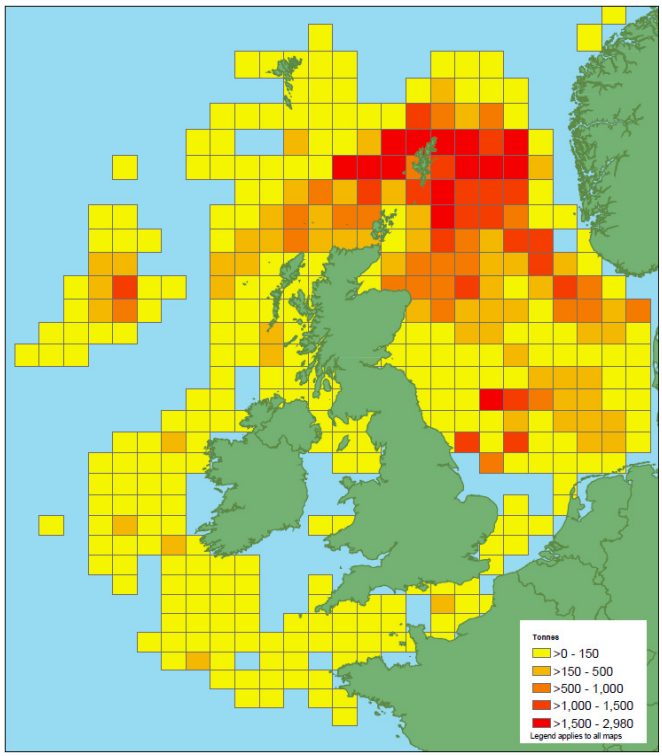
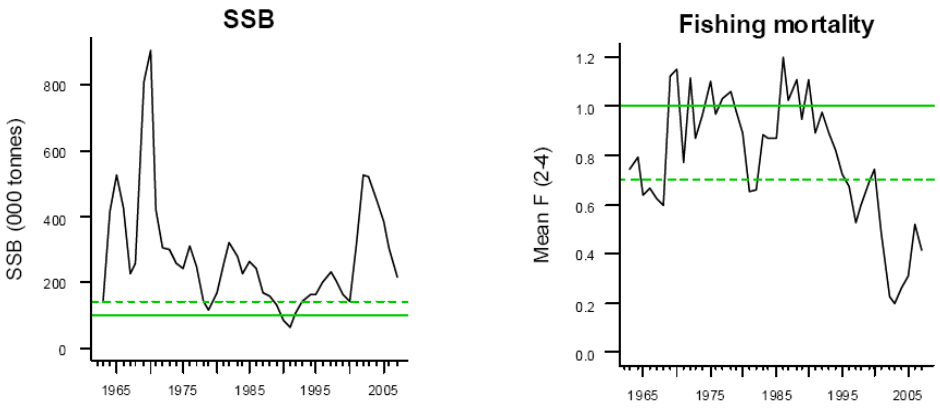


Figure 4.1 Location of demersal species caught by Scottish vessels, 2008
Source: SGMD management information.

The following items were extracted from the 2008 ICES report to the EU and were supplied to event attendees.

Haddock Area IV (North Sea)



6.4.3 Haddock in Subarea IV (North Sea) and Division IIIaN (Skagerrak)

State of the stock

Spawning biomass in relation to precautionary limits	Fishing mortality in relation to precautionary limits	Fishing mortality in relation to highest yield	Fishing mortality in relation to management target	Comment
Full reproductive capacity	Harvested sustainably	Overfished	Above target	

Figure 4.2 Haddock North Sea stock information from ICES report 2008

Subarea IV

Year	ICES Advice	Single-stock exploitation boundaries	Predicted landings corresp. to advice[1]	Predicted landings corresp. to single-stock exploitation boundaries[2]	Agreed TAC	Off. lndgs.	ICES catches Hum. Cons.	Disc Slip.	Indust. bycatch	Total
1987	80% of F(85)		105		140	109	108	59	4	172
1988	77% of F(86); TAC		185		185	105	105	62	4	171
1989	Reduce decline in SSB; TAC; protect juveniles		68		68	64	76	26	2	104
1990	80% of F(88); TAC		50		50	43	51	33	3	87
1991	70% of effort (89)				50	45	45	40	5	90
1992	70% of effort (89)				60	51	70	48	11	129
1993	70% of effort (89)				133	80	80	80	11	170
1994	Significant reduction in effort; mixed fishery				160	87	81	65	4	150
1995	Significant reduction in effort; mixed fishery				120	75	75	57	8	140
1996	Mixed fishery to be taken into account				120	75	76	73	5	154
1997	Mixed fishery to be taken into account				114	73	79	52	7	138
1998	No increase in F		100.3		115	72	77	45	5	128
1999	Reduction of 10% F(95–97)		72		88.6	64	64	43	4	111
2000	F less than F_{pa}		<51.7		73.0	47	45	47	8	100
2001	F less than F_{pa}		<58.0		61	40	39	118	8	165
2002	F less than F_{pa}		<94.0		104.0	54	53	45	4	101
2003	No cod catches		-		52	42	42	23	1	76
2004	Mixed fisheries consideration	F should be below F_{pa}	*	No forecast	85	47	47	17	1	65
2005	Mixed fisheries consideration	F should be below F_{pa}	*	92	66	47	48	10	0	57
2006	Mixed fisheries consideration	F should be below 0.3	*	39	52	36	36	17	0	55
2007	Mixed fisheries consideration	F should be below 0.3	*	55.4	52	30	31	30	0	61
2008	Mixed fisheries consideration	15% TAC reduction TA	*	49.3 [3]	49.3					
2009	Mixed fisheries consideration	Apply management plan		44.7 [3]						

Weights in '000 t.
[1]Only pertaining to the North Sea.
[2] For the whole stock (Division IIIaN and Subarea IV).
[3] Including industrial bycatch.
* Single-stock boundary and the exploitation of this stock should be conducted in the context of mixed fisheries protecting stocks outside safe biological limits.

Figure 4.3 Haddock TACs from ICES report 2008

Haddock Area VIa (West of Scotland)

5.4.23 Haddock in Division VIa (West of Scotland)

State of the stock

Spawning biomass in relation to precautionary limits	Fishing mortality in relation to precautionary limits	Fishing mortality in relation to highest yield	Fishing mortality in relation to agreed target	Comment
Increased risk	Increased risk	Overfished	NA	

Based on the most recent estimate of SSB (in 2008) and fishing mortality (in 2007) ICES classifies the stock as being at risk of reduced reproductive capacity and at risk of being harvested unsustainably. The very strong 1999 year class caused SSB to increase from a level near the historic low in 2000 to a peak in 2003, but it has declined since. F has been above F_{pa} in most years since 1987. The 2003 to 2006 year classes are estimated to be weak. The 2005 year class is of moderate strength.

Figure 4.4 Haddock West of Scotland stock information from ICES report 2008

Year	ICES Advice	Single-Stock Exploitation Boundaries	Predicted catch corresp. to advice	Predicted catch corresp. to Single-Stock Exploitation Boundaries	Agreed TAC[1]	Official Landings	ICES Landings	Discard Slip.	ICES Catch
1987	Reduce F towards F_{max}		20.0		32.0	27	27.0	16.2	43.2
1988	No increase in F; TAC		25.0		35.0	21	21.1	10.2	31.3
1989	80% of F(87); TAC		15.0		35.0	24	16.7	3.2	19.9
1990	80% of F(88); TAC		14.0		24.0	13	10.1	5.4	15.5
1991	70% of effort (89)		-		15.2	10	10.6	9.2	19.8
1992	70% of effort (89)		-		12.5	7	11.4[2]	9.4[2]	20.8[2]
1993	70% of effort (89)		-		17.6	13	19.1[2]	16.9[2]	36.0[2]
1994	30% reduction in effort		-		16.0	9	14.2[2]	11.2[2]	25.4[2]
1995	Significant reduction in effort		-		21.0	13	12.4	8.8	21.2
1996	Significant reduction in effort		-		22.9	13	13.4	11.8	25.3
1997	Significant reduction in effort		-		20.0	13	12.9	6.6	19.5
1998	No increase in F		20.8[3]		25.7	14	14.4	5.7	20.1
1999	F reduced to F_{pa}		14.3[3]		19.0	11	10.4	5.1	15.6
2000	Maintain F below F_{pa}		<14.9[3]		19.0	7	6.9	8.2	15.2
2001	Reduce F below F_{pa}		<11.2[3]		13.9	7	6.7	7.2	14.0
2002	Reduce F below F_{pa}		<14.1[3]		14.1	7	7.1	8.6	15.2
2003	No cod catches		-		8.7	4.9	5.3	4.2	9.6
2004	[4]	F_{pa}		12.2	6.5	3.0	3.2	n/a	n/a
2005	[4]	¾* F_{pa}		7.6	7.6	3.2	3.1	n/a	n/a
2006	[4]	0.7* F_{pa}		8.0	7.81	5.7	5.7	n/a	n/a
2007		0.87* F_{pa}		7.2	7.2	3.7	3.7	n/a	n/a
2008		$SSB>B_{pa}$ in 2009		4.2	6.12				
2009		No fishing and recovery plan		0					

All weights in thousand tonnes.
[1] TAC is set for Divisions VIa and VIb (plus Subdivision Vb_1 and Subareas XII and XIV), combined with restrictions on the quantity that can be taken in Division VIa from 1990.
[2] Adjusted for misreporting.
[3] For Division VIa only.
[4] Single-stock boundary and the exploitation of this stock should be conducted in the context of mixed fisheries protecting stocks outside safe biological limits.

Figure 4.5 Haddock West of Scotland TACs from ICES report 2008

5.4.24 Haddock in Division VIb (Rockall)

State of the stock

Spawning biomass in relation to precautionary limits	Fishing mortality in relation to precautionary limits	Fishing mortality in relation to highest yield	Fishing mortality in relation to agreed target	Comment
Full reproductive capacity	Harvested sustainably	Overfished	Not defined	

Based on the most recent estimates of SSB (in 2008) and fishing mortality (in 2007) ICES classifies the stock as having full reproductive capacity and it is harvested sustainably. Spawning biomass has increased in recent years as a result of the 2000 and 2001 year classes. SSB has been above B_{pa} since 2003. Fishing mortality has been above F_{pa} throughout the time-series but has declined since 2005 to below F_{pa}.

Figure 4.6 Haddock Rockall stock assessment information from ICES report 2008

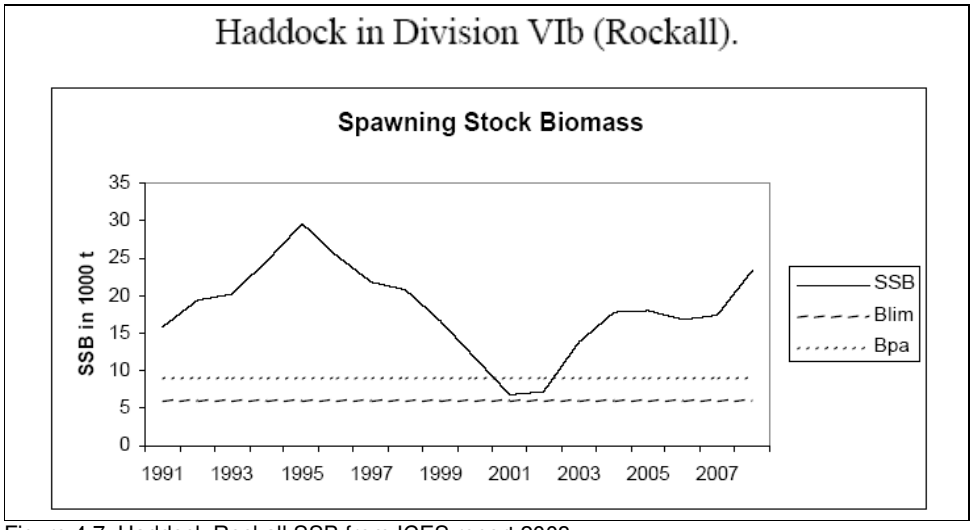


Figure 4.7 Haddock Rockall SSB from ICES report 2008

6.4.2 Cod in Subarea IV (North Sea), Division VIId (Eastern Channel), and Division IIIa (Skagerrak)

State of the stock

Spawning biomass in relation to precautionary limits	Fishing mortality in relation to precautionary limits	Fishing mortality in relation to highest yield	Fishing mortality in relation to agreed target	Comment
Reduced reproductive capacity	Harvested sustainably	Overfished	Above target	

Based on the most recent estimate of SSB (in 2008) and fishing mortality (in 2007), ICES classifies the stock as suffering reduced reproductive capacity and as being harvested sustainably. The general perception of cod abundance remains unchanged, with a historical low in 2006. SSB has shown an increase since then but remains below B_{lim}. Fishing mortality has shown a decline since 2000, and is currently estimated to be just below F_{pa}. The 1997–2006 year classes are all estimated to have been well below average. The 2005 year class is estimated to be one of the most abundant amongst the recent below-average year classes.

Figure 4.8 Cod North Sea stock information from ICES report 2008

Table 6.4.2.1 Cod (*gadus morhua*) in Subarea IV (North Sea), Division VIId (Eastern Channel), and Division IIIa (Skagerrak). Single-stock exploitation boundaries (advice), management, and catch/landings. Landings for each of the three parts of this combined-area assessment, and for all areas combined are given in Table 6.4.2.2.

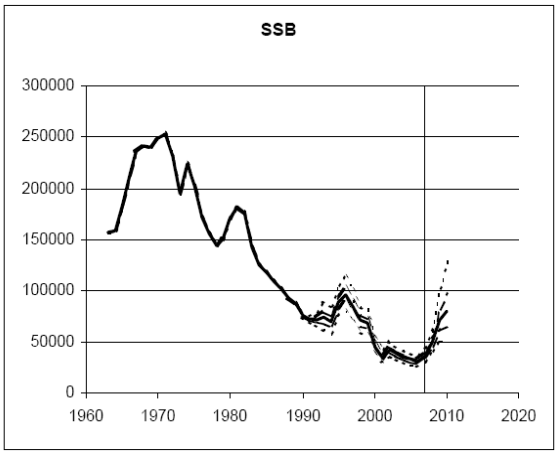
North Sea (Subarea IV)

Year	ICES Advice	Single-stock exploitation boundaries	Predicted catch corresponding to advice	Predicted catch corresp. to single-stock exploitation boundaries	Agreed TAC	Official landings	ICES landings
1987	SSB recovery; TAC		100–125		175	167	182
1988	70% of F(86); TAC		148		160	142	157
1989	Halt SSB decline; protect juveniles; TAC		124		124	110	116
1990	80% of F (88); TAC		113		105	99	105
1991	70% of effort (89)				100	87	89
1992	70% of effort (89)				100	98	97
1993	70% of effort (89)				101	94	105
1994	Significant effort reduction				102	87	95
1995	Significant effort reduction				120	112	120
1996	80% of F(94) = 0.7		141		130	104	107
1997	80% of F(95) = 0.65		135		115	100	102
1998	F(98) should not exceed F(96)		153		140	114	122
1999	F = 0.60 to rebuild SSB		125		132	80	78
2000	F less than 0.55		< 79		81	62	59
2001	lowest possible catch		0		48.6	42.3	41
2002	lowest possible catch		0		49.3	44.2	44.3
2003	Closure		0		27.3	27.4	NA
2004	Zero catch	Zero catch	0	0	27.3	23.4	NA
2005	Zero catch	Zero catch	0	0	27.3	23.9	NA
2006	Zero catch	Zero catch	0	0	23.2	22.2	NA
2007	Zero catch	Zero catch	0	0	20.0	19.7	NA
2008	Exploitation boundaries in relation to precautionary limits	Total removals less than 22 000 t	< 22	< 22	22.2		
2009	Zero catch	Zero catch	0	0			

Weights in '000 t.

Figure 4.9 Cod TACs from ICES report 2008

Cod Area IV (North Sea)



Cod (*gadus morhua*) in Subarea IV (North Sea), Division VIId (Eastern Channel), and Division IIIa (Skagerrak). B-ADAPT forecast for a reduction in fishing mortality by 10% from 2008, followed by constant fishing mortality at the 2008 level for 2009 onwards. Broken lines represent bootstrap percentiles (5,25,75,95), and the solid trajectory the median.

Figure 4.10 Cod North Sea forecasts from ICES report 2008

Table 6.4.2.3 Cod (*Gadus morhua*) in Subarea IV (North Sea), Division VIId (Eastern Channel), and Division IIIa (Skagerrak). Landings, discards, and estimated total removals in tonnes.

	Landings	Discards	Catch (L+D)	Total estimated removals
1985	214.6	31.5	246.1	247.0
1986	204.1	139.1	343.1	341.0
1987	216.2	27.8	244.1	244.8
1988	184.2	10.7	195.0	194.8
1989	139.9	62.1	202.1	202.6
1990	125.3	27.0	152.3	153.0
1991	102.5	18.6	121.0	121.2
1992	114.0	36.9	150.9	151.8
1993	121.7	21.9	143.6	177.5
1994	110.6	99.6	210.2	212.9
1995	136.1	32.2	168.3	229.1
1996	126.3	14.3	140.6	203.8
1997	124.2	33.6	157.8	176.5
1998	146.0	40.5	186.5	182.5
1999	96.2	14.2	110.4	139.1
2000	71.4	13.7	85.1	95.5
2001	49.7	13.9	63.6	75.8
2002	54.9	5.7	60.6	81.7
2003	30.9	6.4	37.2	76.5
2004	28.2	5.8	34.0	52.0
2005	28.7	6.3	35.0	52.4
2006	26.6	8.1	34.6	53.5
2007	24.4	23.6	47.9	62.6

Figure 4.11 Cod North Sea estimated removals from ICES report 2008

5.4.21 Cod in Division VIa (West of Scotland)

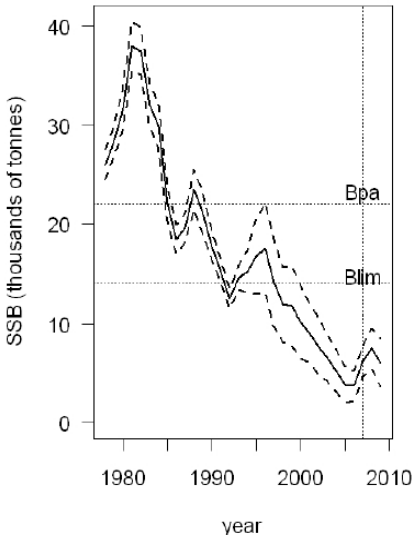
State of the stock

Spawning biomass in relation to precautionary limits	Fishing mortality in relation to precautionary limits	Fishing mortality in relation to highest yield	Fishing mortality in relation to agreed target	Comment
Reduced reproductive capacity	Unknown	Unknown	Not defined	Total mortality cannot be accurately partitioned into fishing mortality and natural mortality

Based on the most recent estimates of SSB (in 2008) ICES classifies the stock as suffering reduced reproductive capacity. Total mortality is probably high but cannot be accurately partitioned into fishing mortality and natural mortality. The spawning-stock biomass has increased from an all time low in 2006 but remains well below B_{lim}. Recruitment has been estimated to be low over the last decade. The 2005 year class is estimated to be the largest for that decade, but still below the long-term average.

Figure 4.12 Cod West of Scotland stock assessment from ICES report 2008

Cod
Area VIa
(West of Scotland)



Cod in Division VIa. Summary plot of TSA final run (landings and discard data excluded from 1995 onward). In the catch figure, open circles indicate observed catches, and lines indicate estimated removals. Estimates are plotted with approximate point-wise 95% confidence bounds. The vertical line in each plot delineates the last year of the historical assessment (2007); estimates to the right of these lines are the TSA-based forecast using *status quo* removal.

Figure 4.13 Cod West of Scotland SSB from ICES report 2008

6.4.5 Whiting in Subarea IV (North Sea) and Division VIId (Eastern Channel)

State of the stock

Spawning biomass in relation to precautionary limits	Fishing mortality in relation to precautionary limits	Fishing mortality in relation to highest yield	Fishing mortality in relation to agreed target	Comments
Undefined	Undefined	Overfished	NA	

In the absence of defined reference points, the state of the stock cannot be evaluated. An analytical assessment estimates SSB in 2008 a being at the lowest level since the beginning of the time-series in 1990. Fishing mortality has decreased through the time-series, but increased in recent years to twice F_{max}. Recruitment has been very low since 2001.

Figure 4.14 Whiting North Sea stock assessment from ICES report 2008

5.4.25 Whiting in Division VIa (West of Scotland)

Single-stock exploitation boundaries

The new landing and survey data available for this stock do not change the perception of the stock and do not give reason to change the advice from 2007. The advice for the fishery in 2009 is therefore the same as the advice given in 2007 for the 2008 fishery: *"Given that SSB is estimated at the lowest observed level and total mortality at the highest level over the time period, catches [...] should be reduced to the lowest possible level."*

This advice will be updated in 2009.

5.4.26 Whiting in Division VIb (Rockall)

State of the stock

Landings of whiting from Division VIb are negligible. No assessment has been carried out on this stock.

Figure 4.15 Whiting West of Scotland stock assessment advice from ICES report 2008

The following information relates to the sector vessels, their characteristics, activity and financial performance.

	Segment Totals	Average Per Vessel
Number of Active Vessels	24	
Length (m)		29.6
Power (kW)	18,517	772
VCU	14,283	595
Registered Tonnage (GT)	8,409	350
Days at Sea	6,085	254
Volume of Landings (Tonnes)	22,221	926
Value of Landings (£)	£31,817,000	£1,326,000
Vessel Age (years)		16

Table 4.1 Segment characteristics, 2007 - NS & WoS single rig trawl over 24m (Scottish vessels)

	Segment Total	Average Per Vessel
Number of Active Vessels	39	
Length (m)		24.7
Power (kW)	19,066	489
VCU	15,445	396
Registered Tonnage (GT)	7,769	199
Days at Sea	6,887	177
Volume of Landings (Tonnes)	19,819	508
Value of Landings (£)	£27,179,000	£697,000
Vessel Age (years)		22

Table 4.2 Segment characteristics, 2007 – NS & WoS pair trawl/seine (Scottish vessels)

	Segment Total	Average Per Vessel
Number of Active Vessels	20	
Length (m)		24.3
Power (kW)	9,851	493
VCU	7,952	398
Registered Tonnage (GT)	3,931	197
Days at Sea	3,092	155
Volume of Landings (Tonnes)	8,466	423
Value of Landings (£)	£11,701,000	£585,000
Vessel Age (years)		24

Table 4.3 Segment characteristics, 2007 – NS & WoS seine (Scottish vessels)

	Segment Total	Average Per Vessel
Number of Active Vessels	14	
Length (m)		23.9
Power (kW)	9,536	681
VCU	6,886	492
Registered Tonnage (GT)	3,710	265
Days at Sea	2,919	209
Volume of Landings (Tonnes)	8,287	592
Value of Landings (£)	£13,741,702	£981,550
Vessel Age (years)		10

Table 4.4 Segment characteristics, 2007 – NS & WoS twin rig trawl (Scottish vessels)

	Segment Total	Average Per Vessel
Number of Active Vessels	15	
Length (m)		20.6
Power (kW)	6,959	464
VCU	5,316	354
Registered Tonnage (GT)	2,400	160
Days at Sea	3,107	207
Volume of Landings (Tonnes)	5,257	350
Value of Landings (£)	£11,377,945	£758,530
Vessel Age (years)		16

Table 4.5 Segment characteristics, 2007 – NS & WoS single rig trawl under 24m over 300 kW (Scottish vessels)

	Segment Total	Average Per Vessel
Number of Active Vessels	9	
Length (m)		14.9
Power (kW)	1,833	204
VCU	1,598	178
Registered Tonnage (GT)	501	56
Days at Sea	1,338	149
Volume of Landings (Tonnes)	1,003	111
Value of Landings (£)	£2,082,367	£231,374
Vessel Age (years)		24

Table 4.6 Segment characteristics, 2007 – NS & WoS single rig trawl under 24m under 300 kW (Scottish vessels)

	No of active vessels	Sum of days at sea	Sum of landings (Tonnes)	No. of vessels required if all did max days at sea	No. of vessels required if all did 80% of max days at sea
Single rig trawl over 24m	24	6,085	22,221	19	24
Pair trawl/seine	39	6,887	19,819	27	33
Seine	19	3,092	8,466	14	17
Twin rig trawl	14	2,919	8,287	10	12
Single rig trawl < 24m > 300 kW	15	3,107	5,257	10	13

Table 4.7 Capacity utilisation, 2007

	Average Per Vessel
Total Crew	8
Full Time Crew	8
Part Time Crew	
Foreign Crew (non UK, as % of total crew)	32%

Table 4.8 Crew characteristics, 2007 – NS & WoS single rig trawl over 24m (Scottish vessels)

	Average Per Vessel
Total Crew	6
Full Time Crew	6
Part Time Crew	
Foreign Crew (non UK, as % of total crew)	30%

Table 4.9 Crew characteristics, 2007 – NS & WoS pair trawl/seine (Scottish vessels)

	Average Per Vessel
Total Crew	7
Full Time Crew	7
Part Time Crew	
Foreign Crew (non UK, as % of total crew)	28%

Table 4.10 Crew characteristics, 2007 – NS & WoS twin rig trawl (Scottish vessels)

	Average Per Vessel
Total Crew	6
Full Time Crew	6
Part Time Crew	
Foreign Crew (non UK, as % of total crew)	28%

Table 4.11 Crew characteristics, 2007 – NS & WoS single rig trawl under 24m over 300 kW (Scottish vessels)

	Average Per Vessel
Total Crew	3
Full Time Crew	3
Part Time Crew	
Foreign Crew (non UK, as % of total crew)	33%

Table 4.12 Crew characteristics, 2007 – NS & WoS single rig trawl under 24m under 300 kW (Scottish vessels)

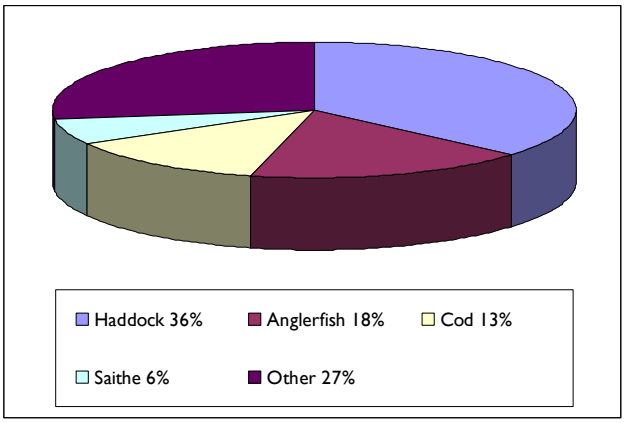


Figure 4.16 Catch composition, 2007 (in value) - NS & WoS single rig trawl over 24m (Scottish vessels)

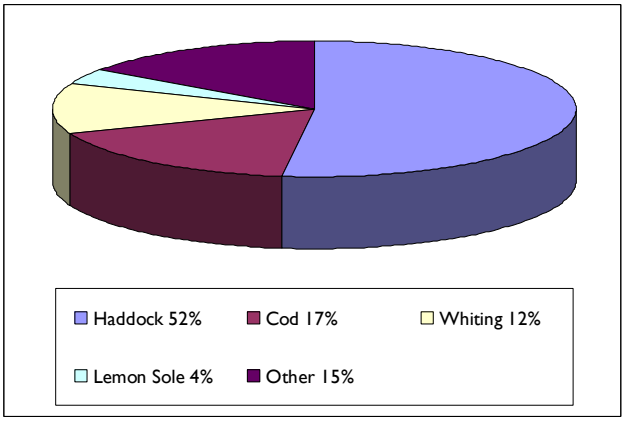


Figure 4.17 Catch composition, 2007 (in value) - NS & WoS pair trawl/seine (Scottish vessels)

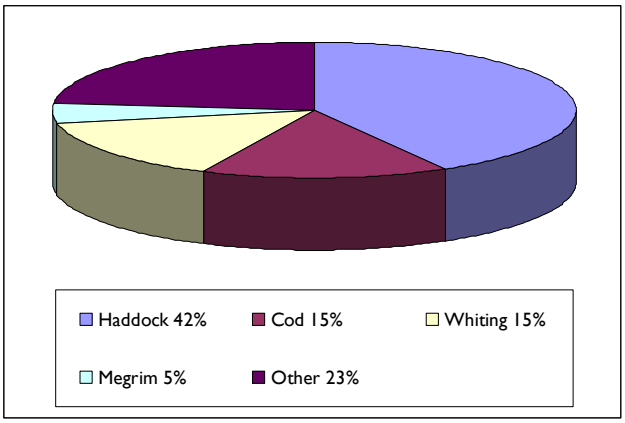


Figure 4.18 Catch composition, 2007 (in value) - NS & WoS seine (Scottish vessels)

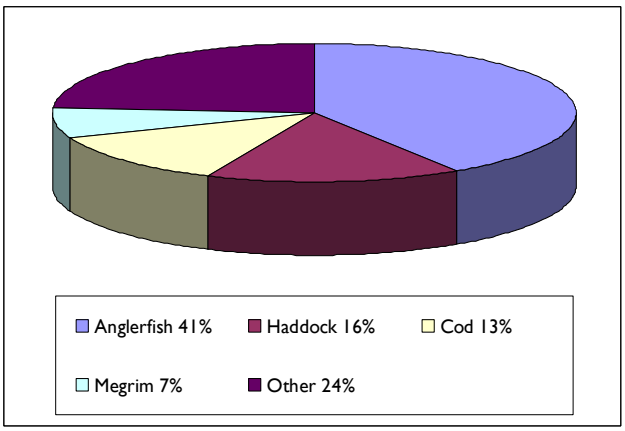


Figure 4.19 Catch composition, 2007 (in value) - NS & WoS twin rig trawl (Scottish vessels)

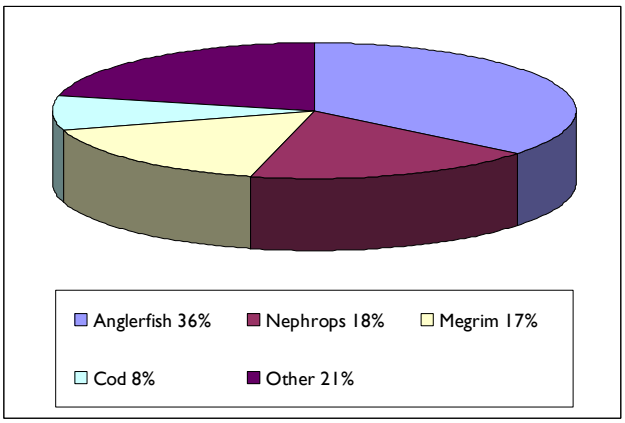


Figure 4.20 Catch composition, 2007 (in value) - NS & WoS single rig trawl under 24m over 300 kW (Scottish vessels)

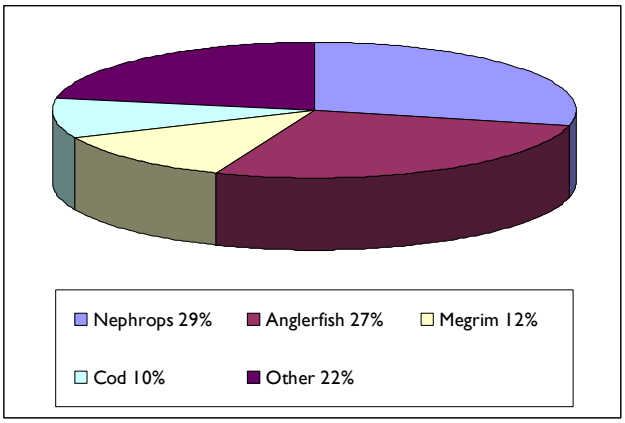


Figure 4.21 Catch composition, 2007 (in value) – NS & WoS single rig trawl under 24m over 300 kW (Scottish vessels)

4.2 Financial Performance of the Fleet and Drivers of Profit

Average per boat for:	Top quarter of earners	Segment average	Lower quarter of earners
Fishing income	£2,209,000	£1,400,000	£927,000
Fuel & Oil cost	£483,000	£299,000	£220,000
Crew share	£506,000	£321,000	£212,000
Operating Profit	£459,000	£218,000	£56,000
Net Profit	£298,000	£152,000	£37,000
Days at Sea	303	249	203

Table 4.13 Average vessel performance, 2007 - NS & WoS single rig trawl over 24m (Scottish vessels)

Average per boat for:	Top quarter of earners	Segment average	Lower quarter of earners
Fishing income	£1,038,000	£697,000	£363,000
Fuel & Oil cost	£133,000	£94,000	£62,000
Crew share	£322,000	£216,000	£113,000
Operating Profit	£183,000	£85,000	-£22,000
Net Profit	£116,000	£50,000	-£33,000
Days at Sea	228	177	130

Table 4.14 Average vessel performance, 2007 - NS & WoS pair trawl/seine (Scottish vessels)

Average per boat for:	Top quarter of earners	Segment average	Lower quarter of earners
Fishing income	£893,000	£550,000	£213,000
Fuel & Oil cost	£96,000	£65,000	£36,000
Crew share	£288,000	£177,000	£69,000
Operating Profit	£177,000	£59,000	- £50,000
Net Profit	£118,000	£33,000	- £63,000
Days at Sea	188	153	99

Table 4.15 Average vessel performance, 2007 - NS & WoS seine (Scottish vessels)

Average per boat for:	Top quarter of earners	Segment average	Lower quarter of earners
Fishing income	£1,593,000	£982,000	£393,000
Fuel & Oil cost	£382,000	£256,000	£107,000
Crew share	£382,000	£236,000	£94,000
Operating Profit	£217,000	£58,000	-£39,000
Net Profit	£99,000	-£2,000	-£59,000
Days at Sea	278	209	119

Table 4.16 Average vessel performance, 2007 - NS & WoS twin rig trawl (Scottish vessels)

Average per boat for:	Top quarter of earners	Segment average	Lower quarter of earners
Fishing income	£1,183,000	£759,000	£558,000
Fuel & Oil cost	£233,000	£164,000	£126,000
Crew share	£344,000	£221,000	£162,000
Operating Profit	£263,000	£114,000	£46,000
Net Profit	£222,000	£97,000	£40,000
Days at Sea	267	207	193

Table 4.17 Average vessel performance, 2007 – NS & WoS single rig trawl under 24m over 300 kW (Scottish vessels)

Average per boat for:	Most profitable quarter	Least profitable quarter
Fishing income	£1,795,000	£1,162,000
Net Profit	£339,000	- £11,000
Vessel length (m)	29	30
Power (kW)	764	936
Volume landed (Tonnes)	1,252	800
Days at Sea	252	243
Volume per day at sea (Tonnes per day)	4.97	3.30

Table 4.18 Characteristics of the most profitable quarter and the least profitable quarter, 2007 NS & WoS single rig trawl over 24m (Scottish vessels)

The definition of the profitable quarters is based on the ratio of operational profit as a percentage of gross fishing income

Average per boat for:	Most profitable quarter	Least profitable quarter
Fishing income	£982,000	£358,000
Net Profit	£140,000	- £39,000
Vessel length (m)	24	23
Power (kW)	488	420
Volume landed (Tonnes)	690	274
Days at Sea	208	136
Volume per day at sea (Tonnes per day)	3.31	2.02

Table 4.19 Characteristics of the most profitable quarter and the least profitable quarter, 2007 NS & WoS pair trawl/seine (Scottish vessels)

Average per boat for:	Most profitable quarter	Least profitable quarter
Fishing income	£874,000	£234,000
Net Profit	£127,000	- £67,000
Vessel length (m)	25	22
Power (kW)	464	335
Volume landed (Tonnes)	631	161
Days at Sea	186	116
Volume per day at sea (Tonnes per day)	3.38	1.39

Table 4.20 Characteristics of the most profitable quarter and the least profitable quarter, 2007 NS & WoS seine (Scottish vessels)

Average per boat for:	Most profitable quarter	Least profitable quarter
Fishing income	£1,559,000	£537,000
Net Profit	£129,000	-£136,000
Vessel length (m)	24	24
Power (kW)	678	732
Volume landed (Tonnes)	904	352
Days at Sea	281	136
Volume per day at sea (Tonnes per day)	3.21	2.60

Table 4.21 Characteristics of the most profitable quarter and the least profitable quarter, 2007 NS & WoS twin rig trawl (Scottish vessels)

Average per boat for:	Most profitable quarter	Least profitable quarter
Fishing income	£990,000	£492,000
Net Profit	£200,000	£0,000
Vessel length (m)	18	23
Power (kW)	433	498
Volume landed (Tonnes)	410	271
Days at Sea	248	157
Volume per day at sea (Tonnes per day)	1.66	1.73

Table 4.22 Characteristics of the most profitable quarter and the least profitable quarter, 2007 NS & WoS single rig trawl under 24m over 300 kW (Scottish vessels)

	Most profitable quarter		Segment		Least profitable quarter	
	Average (£)	% of Earnings	Average (£)	% of Earnings	Average (£)	% of Earnings
Fishing Income	1,795,000		1,399,600	97%	1,161,500	
Non-Fishing Income	46,700		36,400	3%	30,200	
Total Earnings	**1,841,600**		**1,436,000**	**100%**	**1,191,700**	
Fishing Expenses						
Commission	95,100		74,200	5%	61,600	
Harbour Dues	77,200		60,200	4%	49,900	
Subscriptions & Levies	7,600		6,000	0%	6,200	
Shore Labour	13,800		10,900	1%	8,800	
Fuel and Oil	301,900	16%	299,100	21%	342,600	29%
Boxes	15,800		12,300	1%	10,100	
Ice	17,900		14,000	1%	11,400	
Crew Travel	5,400		5,400	0%	5,200	
Food Stores	17,700		17,500	1%	20,100	
Quota Leasing	81,000	4%	80,200	6%	78,000	7%
Days Purchase	46,800		46,300	3%	45,100	
Other Expenses	12,700		12,500	1%	12,200	
Crew Share	411,000	22%	320,500	22%	266,000	22%
Total Fishing Expenses	**1,103,900**	**60%**	**959,100**	**67%**	**917,200**	**77%**
Vessel Owner Expenses						
Insurance	48,600		48,100	3%	55,600	
Repairs	93,100		92,200	6%	89,700	
Gear	79,800		79,000	6%	76,900	
Hire and Maintenance	12,400		12,200	1%	14,000	
Other Vessel Owner Expenses	27,600		27,400	2%	31,600	
Total Vessel Owner Expenses	**261,400**	**14%**	**258,900**	**18%**	**267,800**	**22%**
Total Expenses	**1,365,300**	**74%**	**1,218,000**	**85%**	**1,184,900**	**99%**
Profit (operating)	**476,400**	**26%**	**218,000**	**15%**	**6,800**	**1%**
Depreciation	79,300		38,400	3%	10,000	
Interest	57,800		28,000	2%	7,300	
Net Profit	**339,300**	**18%**	**151,700**	**11%**	**-10,600**	**-1%**

Table 4.23 Average cost structure - NS & WoS single rig trawl over 24m (Scottish vessels)

	Most profitable quarter		Segment		Least profitable quarter	
	Average (£)	% of Earnings	Average (£)	% of Earnings	Average (£)	% of Earnings
Fishing Income	981,700		696,900	97%	358,300	
Non-Fishing Income	34,200		24,300	3%	12,500	
Total Earnings	**1,015,800**		**721,200**	**100%**	**370,700**	
Fishing Expenses						
Commission	48,900		34,700	5%	17,800	
Harbour Dues	32,400		23,000	3%	11,800	
Subscriptions & Levies	10,400		7,800	1%	3,500	
Shore Labour	10,400		7,600	1%	4,100	
Fuel and Oil	106,800	11%	93,900	13%	62,100	17%
Boxes	16,800		12,300	2%	6,600	
Ice	16,700		12,300	2%	6,600	
Crew Travel	0		0	0%	0	
Food Stores	14,900		13,100	2%	8,700	
Quota Leasing	49,800	5%	42,300	6%	32,500	9%
Days Purchase	4,600		3,900	1%	3,000	
Other Expenses	13,300		11,300	2%	8,700	
Crew Share	304,800	30%	216,400	30%	111,200	30%
Total Fishing Expenses	**629,800**	**62%**	**478,700**	**66%**	**276,700**	**75%**
Vessel Owner Expenses						
Insurance	28,500		29,000	4%	25,500	
Repairs	94,000		79,800	11%	61,200	
Gear	27,600		23,500	3%	18,000	
Hire and Maintenance	11,600		10,200	1%	6,700	
Other Vessel Owner Expenses	14,400		14,700	2%	12,900	
Total Vessel Owner Expenses	**176,200**	**17%**	**157,100**	**22%**	**124,400**	**33%**
Total Expenses	**805,900**	**79%**	**635,800**	**88%**	**401,100**	**108%**
Profit (operating)	**209,900**	**21%**	**85,300**	**12%**	**-30,300**	**-8%**
Depreciation	37,000		18,700	3%	4,600	
Interest	32,600		16,400	2%	4,100	
Net Profit	**140,300**	**14%**	**50,200**	**7%**	**-39,000**	**-11%**

Table 4.24 Average cost structure, 2007 - NS & WoS pair trawl/seine (Scottish vessels)

	Most profitable quarter		Segment		Least profitable quarter	
	Average (£)	% of Earnings	Average (£)	% of Earnings	Average (£)	% of Earnings
Fishing Income	873,800		550,300	96%	234,000	
Non-Fishing Income	36,700		23,100	4%	9,800	
Total Earnings	**910,500**		**573,400**	**100%**	**243,800**	
Fishing Expenses						
Commission	41,100		25,900	5%	11,000	
Harbour Dues	30,600		19,300	3%	8,200	
Subscriptions & Levies	16,400		9,800	2%	3,600	
Shore Labour	4,600		3,000	1%	1,200	
Fuel and Oil	86,500	10%	64,500	11%	38,400	16%
Boxes	12,200		8,000	1%	3,100	
Ice	13,200		8,600	1%	3,400	
Crew Travel	1,800		1,500	0%	1,100	
Food Stores	14,200		10,600	2%	6,300	
Quota Leasing	27,000	3%	22,200	4%	16,800	7%
Days Purchase	1,800		1,500	0%	1,100	
Other Expenses	36,000		29,500	5%	22,300	
Crew Share	281,400	31%	177,200	31%	75,300	31%
Total Fishing Expenses	**566,800**	**62%**	**381,500**	**67%**	**191,900**	**79%**
Vessel Owner Expenses						
Insurance	24,600		22,300	4%	19,200	
Repairs	63,500		52,100	9%	39,400	
Gear	30,700		25,200	4%	19,000	
Hire and Maintenance	8,800		6,500	1%	3,900	
Other Vessel Owner Expenses	29,700		27,000	5%	23,100	
Total Vessel Owner Expenses	**157,300**	**18%**	**133,100**	**23%**	**104,600**	**43%**
Total Expenses	**724,100**	**80%**	**514,600**	**90%**	**296,500**	**122%**
Profit (operating)	**186,400**	**20%**	**58,800**	**10%**	**-52,700**	**-22%**
Depreciation	37,100		16,500	3%	8,800	
Interest	22,000		9,800	2%	5,200	
Net Profit	**127,200**	**14%**	**32,600**	**6%**	**-66,700**	**-27%**

Table 4.25 Average cost structure, 2007 - NS & WoS seine (Scottish vessels)

	Most profitable quarter		Segment		Least profitable quarter	
	Average (£)	% of Earnings	Average (£)	% of Earnings	Average (£)	% of Earnings
Fishing Income	1,559,400		981,600	98%	537,300	
Non-Fishing Income	34,300		21,600	2%	11,800	
Total Earnings	**1,593,700**		**1,003,100**	**100%**	**549,100**	
Fishing Expenses						
Commission	68,600		43,200	4%	23,600	
Harbour Dues	68,600		43,200	4%	23,600	
Subscriptions & Levies	42,400		26,700	3%	17,800	
Shore Labour	20,400		13,400	1%	8,000	
Fuel and Oil	338,500	21%	255,500	25%	197,300	36%
Boxes	11,700		7,700	1%	4,600	
Ice	16,500		10,800	1%	6,400	
Crew Travel	2,600		1,900	0%	1,200	
Food Stores	17,700		13,300	1%	10,300	
Quota Leasing	60,300	4%	44,700	4%	29,000	5%
Days Purchase	14,200		10,500	1%	6,800	
Other Expenses	10,800		8,000	1%	5,200	
Crew Share	374,300	23%	235,600	23%	128,900	23%
Total Fishing Expenses	**1,046,600**	**66%**	**714,500**	**71%**	**462,900**	**84%**
Vessel Owner Expenses						
Insurance	36,700		36,200	4%	38,600	
Repairs	120,300		89,100	9%	57,900	
Gear	102,400		75,900	8%	49,300	
Hire and Maintenance	8,600		6,500	1%	5,000	
Other Vessel Owner Expenses	23,600		23,300	2%	24,900	
Total Vessel Owner Expenses	**291,700**	**22%**	**231,000**	**23%**	**175,800**	**32%**
Total Expenses	**1,338,300**	**84%**	**945,500**	**94%**	**638,800**	**116%**
Profit (operating)	**255,500**	**16%**	**57,700**	**6%**	**-89,700**	**-16%**
Depreciation	70,800		33,300	3%	25,900	
Interest	55,900		26,300	3%	20,400	
Net Profit	**128,800**	**8%**	**-2,000**	**0%**	**-136,000**	**-25%**

Table 4.26 Average cost structure, 2007 - NS & WoS twin rig trawl (Scottish vessels)

	Most profitable quarter		Segment		Least profitable quarter	
	Average (£)	% of Earnings	Average (£)	% of Earnings	Average (£)	% of Earnings
Fishing Income	989,500		758,500	93%	492,200	
Non-Fishing Income	79,200		60,700	7%	39,400	
Total Earnings	**1,068,600**		**819,200**	**100%**	**531,600**	
Fishing Expenses						
Commission	52,400		40,200	5%	26,100	
Harbour Dues	36,600		28,100	3%	18,200	
Subscriptions & Levies	13,300		11,500	1%	7,900	
Shore Labour	5,600		4,800	1%	3,700	
Fuel and Oil	177,400	17%	163,500	20%	134,200	25%
Boxes	10,800		9,200	1%	7,100	
Ice	10,600		9,000	1%	7,000	
Crew Travel	0		n/a	n/a	0	
Food Stores	10,900		10,100	1%	8,300	
Quota Leasing	44,900	4%	37,500	5%	28,400	5%
Days Purchase	0		0	0%	0	
Other Expenses	10,700		8,900	1%	6,800	
Crew Share	287,900	27%	220,700	27%	143,200	27%
Total Fishing Expenses	**661,200**	**62%**	**543,600**	**66%**	**390,900**	**74%**
Vessel Owner Expenses						
Insurance	25,800		28,700	4%	31,300	
Repairs	88,200		73,800	9%	55,900	
Gear	42,300		35,300	4%	26,800	
Hire and Maintenance	8,000		7,400	1%	6,100	
Other Vessel Owner Expenses	14,600		16,300	2%	17,700	
Total Vessel Owner Expenses	**179,000**	**17%**	**161,400**	**20%**	**137,800**	**25%**
Total Expenses	**840,100**	**79%**	**705,000**	**86%**	**528,700**	**99%**
Profit (operating)	**228,500**	**21%**	**114,200**	**14%**	**2,900**	**1%**
Depreciation	19,600		11,600	1%	1,700	
Interest	9,300		5,500	1%	800	
Net Profit	**199,500**	**19%**	**97,000**	**12%**	**400**	**0%**

Table 4.27 Average cost structure, 2007 – NS & WoS single rig trawl under 24m over 300 kW (Scottish vessels)

4.3 Markets for the catch

The following information was presented to attendees at the event and influenced the discussions at the break-out tables.

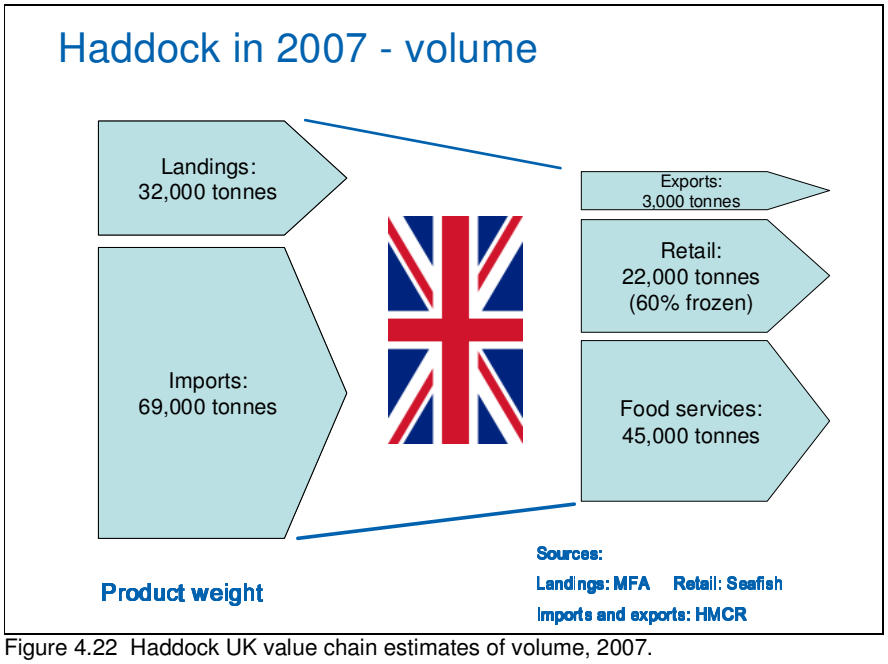


Figure 4.22 Haddock UK value chain estimates of volume, 2007.

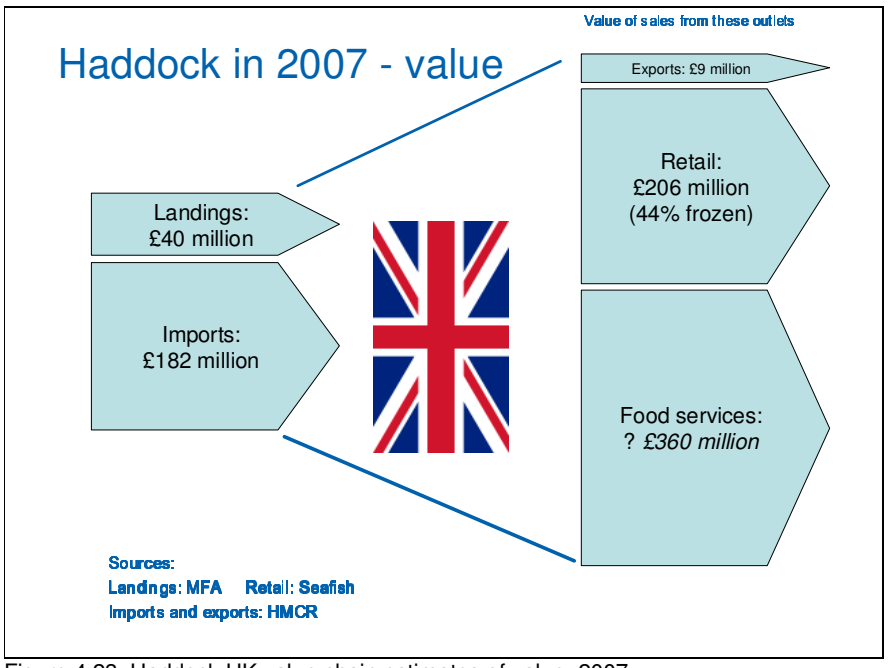


Figure 4.23 Haddock UK value chain estimates of value, 2007

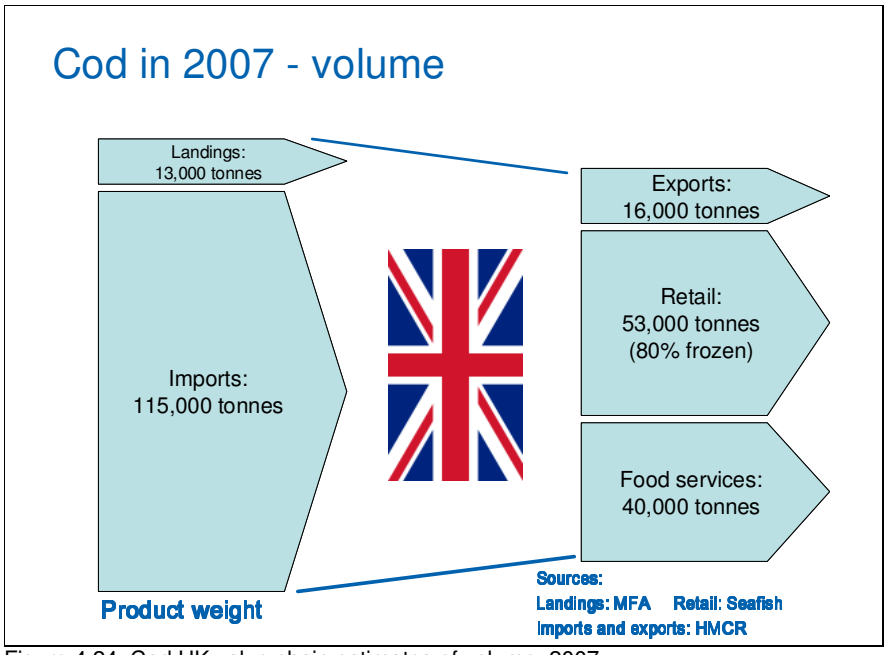


Figure 4.24 Cod UK value chain estimates of volume, 2007.

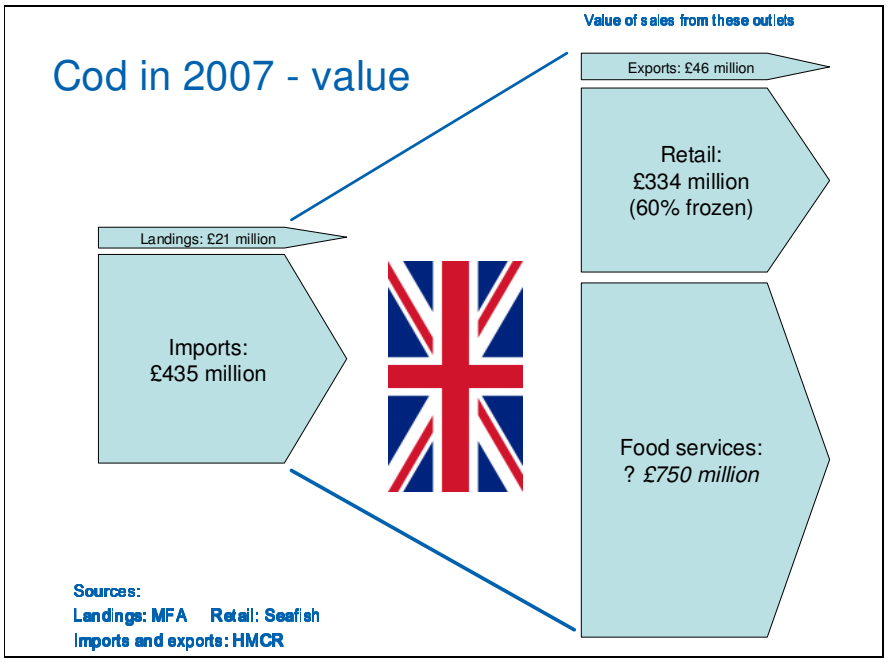


Figure 4.25 Cod UK value chain estimates of value, 2007

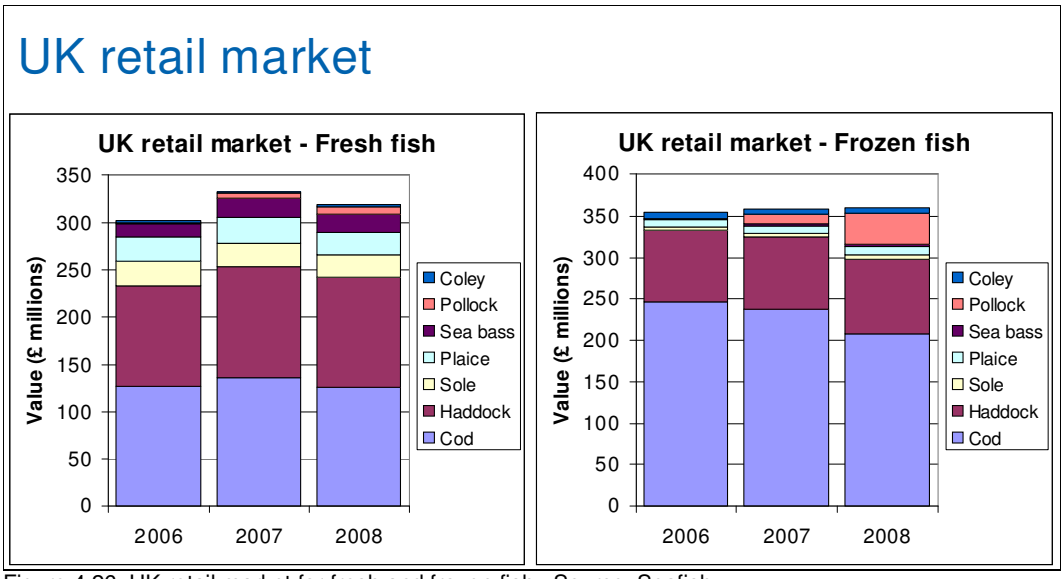


Figure 4.26 UK retail market for fresh and frozen fish. Source: Seafish

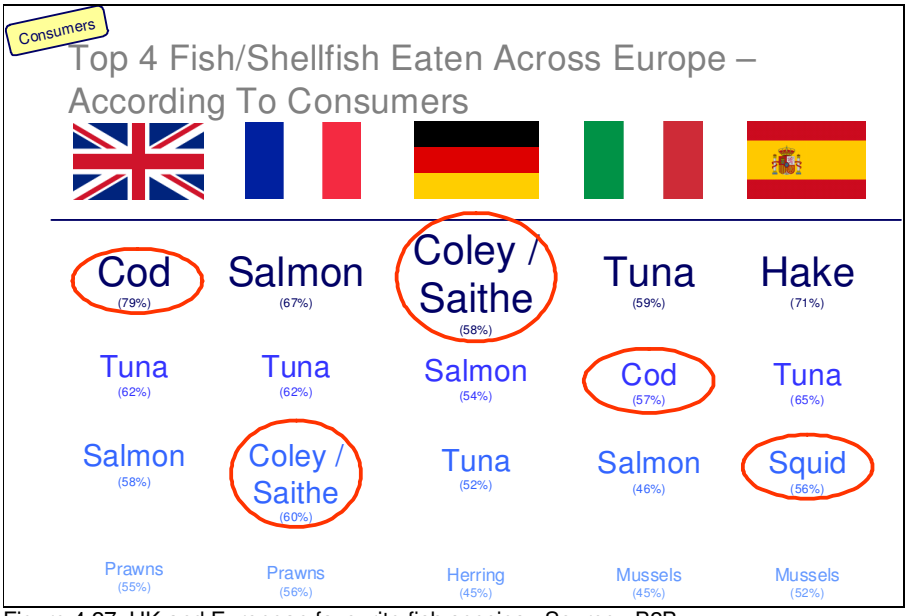


Figure 4.27 UK and European favourite fish species. Source: B2B

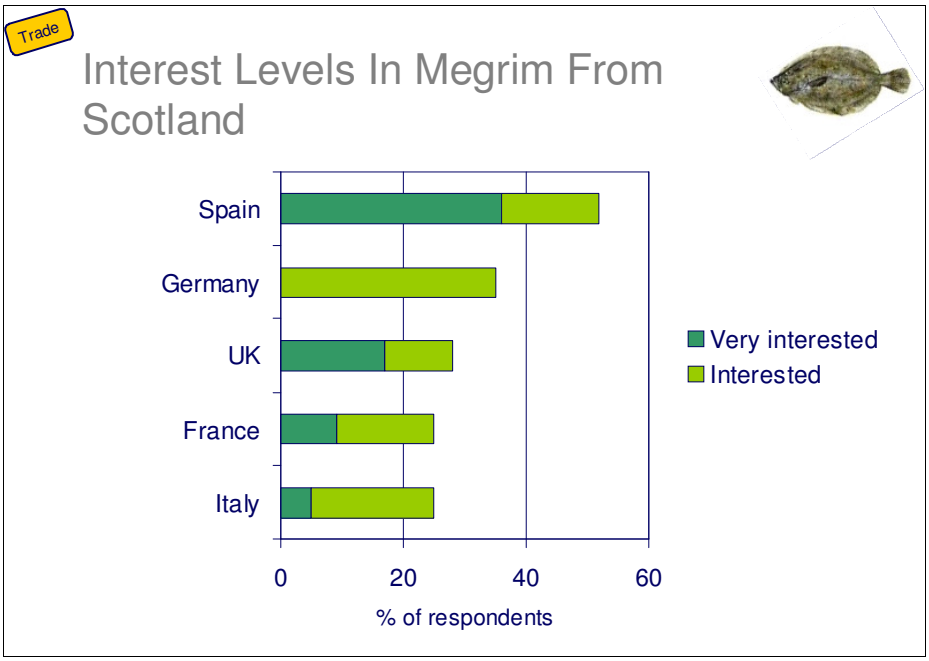


Figure 4.28 European traders' interest in Megrim from Scotland. Source: B2B

Some of the slides about European markets which relate to buyer preferences, regardless of species, were also included in the demersal sector presentation. These slides are included in the nephrops and scallops sections of this report.

4.4 Demersal event Findings and Analysis

This section sets out the findings from the consultation event held on 30th January 2009.

4.4.1 Current Conditions, Opportunities and Challenges

Table 4.28, Table 4.29, Table 4.31 and Table 4.33 provide a summary of current conditions, opportunities and challenges identified by attendees at the event. Following analysis, the findings have been grouped under the following headings: Product, People, Fleet Operation, Access to the Fishery and Stocks, Market Demand and the On-Shore Sector.

What works well? **What are our Opportunities?**	**What doesn't work well?** **What challenges do we face?**
Product	
• High quality fish • Diverse fish species	• Quality has improved but price hasn't
People	
• Skippers are well trained and experienced • Family owned vessels mean people want to stick with it despite frequent crises and benefits remain in communities • Can be a good way of life • Individual fishermen have good business skills	• Lack of Scottish crew • Not enough young people entering industry

Table 4.28 SWOT analysis output from Demersal Sector Event (section a)

What works well? What are our Opportunities?	What doesn't work well? What challenges do we face?
Fleet Operation / Development	
• SNP Government want to help • Technical solutions do exist to reduce fuel costs but expensive to implement • Fuel price has come down but still high and variable • Some opportunities for diversification e.g. non-quota stocks and oil stand-by work • Pair trawling a fuel efficient way to catch fish	• Not possible to think more than one year ahead • Discards are too high • High cost of leasing quota and the need to lease quota • Lack of profitability leads to bad short-term decisions which are not always good for long-term sustainability • Dog-eat-dog atmosphere created by current management systems and challenges creates divisions and creates unpleasant industry culture • Can't get grant assistance for improvements unless vessels are more than 5 years old • Can't predict landings and if you land at the wrong time it can cost you a lot • All materials and equipment are based on petroleum (ropes and nets are big expenditure) • It's expensive/risky to invest significantly in an old vessel to improve fuel efficiency. Only real way to change is through new gear. • Difficult to access finance to invest in fleet modernisation • Ageing fleet increases costs and reduces profitability • On-shore infrastructure which supports fleet is fragile

Table 4.29 Table 4.30 SWOT analysis output from Demersal Sector Event (section b)

What works well? What are our Opportunities?	What doesn't work well? What challenges do we face?
Management of Fish Stocks	
• Have an improving relationship with FRS but many frustrations remain • We know what we're doing is working • Future of fishing looks good	• The views of fishermen are not respected within the system • Fishermen are increasingly being forced into pigeon holes but the system works better where flexibility exists • Fish stock science system. Time lag and inaccuracy are biggest problems. For example TAC for monks does not even reflect science let alone reality at sea • Substantial changes in management system and access to fishery are regular occurrences • Current quota and days at sea levels mean that fleet profitability at risk, any further reductions will require a cut in fleet size • No positive incentives to work for long-term sustainability • Closed areas are based on weak science • Keeping up with new technical regulations can be very expensive • Catching a haul of fish can be a negative experience if don't hold quota as incurs costs of buying quota (or discarding) and then have to move ground thereby incurring more costs and losing time at sea. • Extreme demands for zero catch enflames debate and affects perceptions • Too much politics and not enough reality. West Coast is often sacrificed for North Sea • Environmentalists have too much power, not enough consideration of economics • Doesn't matter how stocks improve things continue to get worse for the fleet • Proposed Red/Amber/Green scheme illogical • Quota is increasingly concentrated in rich hands.

Table 4.31 Table 4.32 SWOT analysis output from Demersal Sector Event (section c)

What works well? What are our Opportunities?	What doesn't work well? What challenges do we face?
Market Demand	
	• Children in UK not educated to eat fish • Large changes in supply through changes in TACs, often difficult for market to catch up so price can fall if TAC rises. Some evidence to suggest this is likely with cod in 2009. Creates conditions of over-supply. Problems for long-term also created if TAC goes down significantly as markets can be lost and on-shore sector suffers • Too few buyers on-shore but difficult to invest due to uncertainty • Too much negative media coverage of fishing • Supermarkets not supporting Scottish catch • Very little diversity in species on offer in restaurant trade • Competition from frozen and fresh imports • Direct sales to processors get a lower price (on west coast there are fewer auctions)
On-shore sector	
	• Reduction in fleet size damages on-shore sector. Increasingly fragile everywhere and disappearing in small ports

Table 4.33 from Demersal Sector Event (section d)

4.4.2 Priority Areas and Proposed Actions

The consultation event invited attendees to vote on which issues they considered to be a priority. However, because many of the issues were inter-linked the findings have been grouped under three key priority areas:

1 Fisheries Management Improvements and Rewards for Positive Results;

2 Old vessels and Cost Reduction; and

3 Positive Promotion and Encouraging Young People into the Industry.

The remainder of this section describes each of these priority areas in turn. Within each priority area the actions proposed during the event are listed.

4.4.2.1 Fisheries Management Improvements and Rewards for Positive Results

Discussions at the event highlighted a wide range of issues which are linked to the problems created by the current method of managing stocks, including the science used to inform decisions. In general the concerns were centred around the following issues:

- The focus on a one-year cycle which can change access to stocks significantly discourages long-term thinking and makes business planning impossible;

- Big shifts in TACs either upwards or downwards create short-term negative impacts as the market can find it hard to adjust, but more often than not big shifts tend to only happen downwards;
- The science does not appear to match the stocks and the relationship between scientists and fishermen is poor, but improving;
- Fisheries management decisions are influenced too much by political negotiations and not enough by reality;
- There are no positive incentives to achieve results. If there are improvements in stocks conditions for the fleet still get worse. Current incentives tend to be threats rather than opportunities;
- The overarching driver or mind-set in fisheries management decision-making appears to be to increasingly restrict/complicate access with no recognition of positive stock improvements; and
- The long-term health of the industry would be greatly enhanced if quota allocations were held by the fishermen.

Many different actions have been proposed under this priority area. Many of the actions proposed were designed to achieve the same goal and therefore some have been grouped under a broad action heading. Others were one-off suggestions targeting a specific issue and are therefore listed separately. The remainder of this section discusses the proposed actions in turn.

Action One: Adopt a More Stable and Regional Approach to Fisheries Management

One of the greatest frustrations apparent during the consultation event is the lack of certainty and turmoil created by the annual revision of the rules and regulations under which the fleet must operate. In addition, one set of rules is often barely in place before the next round of decision-making begins. The consensus was that a management plan must be in place for longer and reduce the amount of change possibly from year to year. This would provide more certainty, improve businesses ability to plan and to understand the implications of measures introduced. It was also commented that it is unlikely that there will be any more investment on-shore until there is more stability and that this has implications for technical advancements and product and market development.

Under this action heading the following proposals were made:

- one breakout group identified a period of three to five years as preferable, another group suggested an appropriate timescale of between five and ten years;
- enable annual flexibility but minimise the potential for huge shifts in TAC, either positive or negative, by limiting the change allowed on an annual basis – without exception;

Attendees were also keen to see less political influence within the system and a greater focus on reality and long-term sustainable fishing. There was also a feeling that only those who were key stakeholders and those would be directly affected by the plan should influence the design of the plan and ideally there should be more national control at a Scottish level to develop the management system to suit local conditions. One breakout group suggested exit from the CFP to ensure this. Another suggested that Scotland should be leading the way in sustainable fishing practices.

Another issue, perhaps related to the degree of political influence, is that there should be more transparent linkages between the stock science advice and the final regulations. One example raised by an attendee was 'what is the maximum landing size for dog fish about?'

There was also a wish to see a longer lead-time before implementation of management changes. In general this would mean a longer period between design and implementation. A longer lead-time was considered to be beneficial as it would create opportunities:

- to undertake an economic appraisal of the likely effects of decision-making; and
- for the market to consider how to deal with proposed changes in supply.

Action Two: Focus on Management of a Mixed Fishery

A substantive point made under improvements to the fisheries management system was the proposal to move towards a focus on the management of a mixed fishery, rather than the current focus on cod.

It was believed that this would result in more practical solutions and overall a better management system.

Action Three: Improve Scientific Assessment Methodology

Closely linked to the previous points was a strong feeling that the way in which stocks are assessed has to change. Comments were made about how the scientific assessment methods, for reasons of continuity, haven't changed in 20 years. Attendees believed that this hindered valuable stock assessments from being undertaken as the scientists' catch is now different from the fishermens' catch. The conclusion appeared to be that any benefits gained from continuity were outweighed by the negative implications of inaccurate or irrelevant assessments.

The attendees recognised that relationships had improved in recent years between the scientists and the fishermen but that there was still some way to go. There was a perception that the views of fishermen are not respected and attendees in general would like to see greater engagement and improvements in the methodology bringing benefits to both sides.

Actions proposed to improve the methodology of stock assessment included:

- more commercial vessels participating in stock surveys and therefore benefits achieved from modern equipment;
- one apparently innovative suggestion was for FRS to hire fishing vessels for observer/scientific trips and rather than paying charter rates, the vessel is paid for its fuel and allowed to keep the catch (presumably without implication for its quota). This should be significantly cheaper than charter fees therefore reducing costs, would use industry resources for management purposes and, importantly, could bring benefits to both sides, therefore greatly assisting relationships and the quantity and quality of information; and
- another suggestion was SFF observers could be used to provide further information.
- attendees would like to see more real-time advice;
- research to provide better quality of information on the impacts of fish conservation closed areas so that they can be better understood as a management tool.

Action Four: Use Positive Incentives to Reward Good Practice

The consultation event highlighted that despite obvious improvements in stock health the fleet had not benefited, and as one attendee said 'they're still chipping away at us'. The perception appeared to be that despite improving fish stocks and vessels 'jumping through hoops' improvements supported by the fleet were not benefiting the fleet. For example, there seemed to be little optimism created by the increase in cod TAC as it had been accompanied by other damaging restrictions.

While it is likely that this more positive incentive approach would need to be integrated into an improved fisheries management system other potential non-access related benefits were suggested, including:

- tax rebates for offshore working; and
- income tax incentives for dangerous working .

Action Five: Increase TACs

Two of the breakout groups simply stated that TACs should increase to reduce the need to hire in quota and that this would improve profitability and therefore have many knock-on benefits. However, it was recognised that to increase TACs would require the fleet to develop and agree workable and beneficial technical measures and discard reduction measures. Suggestions for potential changes that would support an increase in TACs included:

- introducing a minimum landing size; and
- bigger mesh size.

Action Six: Economic Appraisal of Impacts before Decisions are Implemented

There was wide-spread recognition that the environmental lobby had too much power and that there should be greater consideration of the economic impacts of fisheries management decisions both on the fleet and the wider on-shore economy. This would hopefully result in improved decision-making and also help policy makers identify where and how any problems will arise as a result of the proposals.

Action Seven: Review Quota Allocations

There were several comments made about dissatisfaction with quota increasingly becoming concentrated in 'rich-hands' and on-shore. In addition, the profitability of vessels is severely affected by the need to lease in quota. Specific suggestions included:

- enforce a no boat, no quota rule;
- POs to release quotas earlier (not hanging onto quota until lease price rises); and
- reallocate quotas based on last four years landings.

4.4.2.2 Old Vessels and Cost Reduction

The second priority area identified from analysis of the event findings is the old vessels in the fleet and the rising costs associated with operating a vessel. The problems of uncertainty and declining profitability appear to have restricted investment in the fleet and as a result the fleet is ageing. This has a knock-on effect of lowering investment further as vessel owners deal with the rising costs associated with an older vessel combined with growing challenges such as higher fuel costs, reduced access to the fishery and increasingly complex management regulations. In summary costs for the vessels are rising, profitability seems in permanent decline and as a result investment is severely restricted.

In addition, even for those willing to take the risk and invest, the current financial climate has restricted access to external finance from banks.

It was believed by attendees that many of the actions set-out in the previous section could enhance profitability and would therefore encourage future investment. However, the following actions have also been proposed to help reduce barriers to investment.

Action Eight: Fleet Restructuring

A number of attendees would like to see a reduction in fleet size and an increase in the average quota holding so that profitability can be improved. Particular proposals for fleet restricting included:

- Assist the consolidation of licenses from two vessels into one with no reduction in quota. This process was referred to as partial-decommissioning and would need to ensure that capacity of the one vessel was lower than the capacity of two;
- Undertake another round of decommissioning but ensure quota is distributed among remaining licence holders; and
- Decommissioning but with the Government buying the quota and leasing it out to the fleet at a reasonable rate so that they achieve a return on the public sector investment.

Action Nine: Reduce Barriers to Investment

Improvements in gear technology were believed to have a positive impact on costs, however, the investment can be expensive and for many until the technology is proven this is too big a risk for their business. One suggestion as to how investment could be assisted was the provision of favourable loans for investment in a first vessel or new technology.

Action Ten: Cooperative Fuel Purchase Scheme

A specific action, linked to activity already underway, is the wish to introduce a cooperative scheme to cap the fuel price to fishing vessels for next three years.

4.4.2.3 Positive Promotion and Encourage Young People in to the Fleet

There is a belief that negative perceptions about the fishing industry are common and inaccurate amongst consumers and young people. One particular comment was that the perception that there was no fish left had to be changed. The attendees were keen to see the product and their activity valued more highly and for the consumer to be more educated about the fishing industry.

Another area of concern was the lack of young people entering the industry. However, attendees concluded that the actions which assist profitability and therefore improve the wage available to crew will be the key way to encourage young people into the fleet.

Potential actions that target more positive promotion and a clear entrance route into the industry are outlined below.

Action Eleven: Promote the Scottish Product and Good Fishing Practices Adopted

There was confidence that the product landed in Scotland is a high quality product and deserves better recognition than it currently gets. In addition there was a belief that the fishing practices adopted create a sustainable fishery. Ideas for more positive promotion included:

- Evidence of the positive impact that new practices and gear improvements are having on the environment and fish stocks;
- Pursue accreditation for the fishery;
- Develop more promotional activity in schools for example schools could teach more sea/vessel related activities (likely to be extra-curricular) and schools could increase the proportion of fish provided through school meals;
- Promote Scottish product to UK consumer; and
- Seafood Scotland should run a joint promotion with large restaurant/fast food chains.

One breakout group suggested that an increase in promotional costs could be met by the Producers Organisations through their marketing role or through a small increase in the levy.

The ultimate goal of this action is to increase the volume of fish being consumed, particularly within the UK.

Action Twelve: Develop Entrant Schemes for the Industry

Attendees recognised that profitability will have to increase across the fleet before there will be a significant rise in interest from young people in fishing communities. However, even if profitability improvements are achieved it was considered that there will still be a requirement to develop entrance routes into the industry for young people and to encourage vessels to take them on. Two suggestions were:

- Develop Apprenticeships to encourage vessels to take on young men; and
- Support scheme for young crew to get their mates ticket.

4.4.3 Preliminary Priority Actions

From the twelve actions identified above, four were initially prioritised above the others. The following actions reflect the highest priority actions identified by attendees at the event, in order of priority these were:

- Action One: Adopt a More Stable and Regional Approach to Fisheries Management
- Action Three: Improve Scientific Assessment Methodology
- Action Four: Use Positive Incentives to Reward Good Practice
- Action Five: Increase TACs

4.4.4 Summary of the Event Findings

4.4.4.1 Priority Issues

The discussions in the four breakout groups within the event followed the same structure and this allowed different views to be aired. However, overall there was little contradictory information and the same priority areas were identified across the four groups. These issues for the demersal sector can be summarised under the headings:

- Fisheries Management Improvements and Rewards for Positive Results;

- Ageing Fleet and Cost Reduction; and
- Positive Promotion and Encouraging Young People into the Industry.

4.4.4.2 Proposed Actions

Table 4.34 summarises all actions identified under each of the three priority areas and splits them into High, Medium and Low priority in line with discussions at the event. Further consultation will be required to assess potential value to the sector and Scotland against likely cost of implementation of the various actions.

Priority Area	Action	Description	Priority
Fisheries Management Improvements and Rewards for Positive Results	1	Adopt a more Stable and Regional Approach to Fisheries Management	High
	2	Focus on Management of a Mixed Fishery	Medium/ High
	3	Improve Scientific Assessment Methodology	High
	4	Use Positive Incentives to Reward Good Practice	High
	5	Increase TACs	High
	6	Economic Appraisal of Impacts before Decisions are Implemented	Medium
	7	Review Quota Allocations	Medium
Ageing Fleet and Cost Reduction	8	Fleet Restructuring	Medium
	9	Reduce Barriers to Investment	Medium
	10	Cooperative Fuel Purchase Scheme	Medium
Positive Promotion and Encouraging Young People into the Fleet	11	Promote the Scottish Product and Good Fishing Practices Adopted	Medium
	12	Develop Entrant Schemes for the Industry	Low

Table 4.34 Summary of Actions Arising from the Demersal Sector Event

4.5 Demersal sector event attendees

Name	**Organisation / Vessel**
1. David Milne	Vessel Owner
2. John Buchan	Vessel Owner
3. William D Gatt	Vessel Owner
4. James Stephen	Vessel Owner
5. Andrew Gardner	Vessel Owner
6. Brian Buchan	Vessel Owner
7. Neil Rumbles	Vessel Owner
8. John Tait	Vessel Owner
9. Peter Lovie	Vessel Owner
10.Malcolm Morrison	Local Government
11.Sandy Patience	Industry Representative
12.Iain Harcus	Vessel Owner
13.Peter Harcus	Vessel Owner

14.Colin Mitchell	Vessel Owner
15.J W Buchan	Vessel Owner
16.Bill MacKenzie	Vessel Owner
17.James Lovie	Vessel Owner