

# Marine Scotland Science

An Assessment of the Conditions Affecting  
Entry into the Scottish Fishing Industry and  
Potential Policy Responses



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**An Assessment of the Conditions Affecting Entry into the Scottish  
Fishing Industry and Potential Policy Responses**

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The views expressed in this report are those of the researcher and do not necessarily represent those of the Scottish Government or Scottish Ministers.

## Report Summary

### Key conclusions

The current evidence indicates that public intervention beyond the status quo of providing information and training to the industry is not justified at this time. The identified barriers that do make it harder for new, young fishermen to enter the industry do not generally represent instances of market failure and evidence suggests that groups of private individuals e.g. the POs, local councils and wider industry, are already working in a productive capacity to correct and mitigate barriers to entry. An area for consideration is the increasing non-British crewing phenomenon. The Scottish industry, including the majority of the younger workers, is predominantly British. Nonetheless, scope exists for improved government monitoring of this situation going into the future to enable the Government to achieve its economic strategy and aspirations for the Scottish fishing industry.

### Summary of findings

Compared to the age structure of the EU, UK and Scotland, the Scottish fishing industry appears to employ a proportionate number of younger workers: the average age of the fishermen surveyed was 39.4 years and the highest proportion of fishers are found in the 35-49 age cohort. This evidence does not reflect the concern that the industry faces a 'new entrants' problem that government and industry need to address. This situation is however being somewhat substituted by foreign workers. Although the industry is still dominantly British, better and more regular government monitoring of the labour market trends within the industry represents a potential practical response.

The barriers to entry within the Scottish fishing industry are found to be structural rather than strategic. Barriers include financial start-up costs, low exit levels, skills and training requirements and expectations of profitability and returns on investment. High start-up costs in particular are perceived as a significant barrier to entry. While this is certainly the case in the trawl sector fishing for quota stocks, other sectors report relatively low barriers to entry in terms of cost. This suggests that alternative low cost avenues do exist for young fishers to enter and work their way up through the industry by building capacity, experience and financial capital over time.

It is likely that financial start-up costs would be less of an issue if the expected returns on investment were higher. Evidence indicates that most fleet segments are, on average, profitable, but often at relatively low levels given the significant investment required and the inherent risks which the industry faces. In several sectors wages are low in comparison to the UK average, with industry representatives suggesting that this undermines the industry's ability to attract new, young workers.

The other key issues affecting the age structure of the fishing industry are a low rate of exit of older fishermen and the retention of younger crewmen. Older fishermen are often unable or unwilling to retire, which constrains the recycling of quota, licence and vessel ownership to younger fishers and ages the workforce of the industry. Retaining younger crew is a problem as the industry faces competition from the competitive oil and gas, Merchant Navy and renewables sector on account of better wages and wage security.

There are a number of policy responses that could be implemented although overall impacts are uncertain. These include an increase in financial assistance, the provision of quota or licences for new entrants, the facilitation of community quota holdings and changes to the current FQA system. The likelihood, however, is that many of these policies- in particular any administrative redistribution of quota- would create issues of inefficiency, inequity and unintended consequences such as increasing the market price for quota without any guarantee of increasing the rate of entry.

Options exist for a number of more limited but practical policy responses that may be more appropriate. For instance, strategic and targeted funding commitments for training and support, minor changes in aspects of how quotas are traded, the provision of information for skippers wishing to retire, government monitoring of industry labour market trends, and dissemination of information regarding best industry and community practise in encouraging new, young entrants into the industry.

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## **Acronyms**

CQE Community Quota Entitlement

DARDNI Department of Agriculture and Rural Development Northern Ireland

Defra Department for Environment, Food and Rural Affairs

EC European Commission

EFF European Fisheries Fund

EFO Egg Farmers of Ontario

EU European Union

FITA Fishing Industry Training Association

FQA Fixed Quota Allocation

IFQ Individual Fishing Quota

IMO International Maritime Organisation

MMA Marine Modern Apprenticeship

MS Member State (of the European Union)

OECD Organisation for Economic Co-operation and Development

OHFSS Outer Hebrides Fisheries Support Scheme

OFT Office of Fair Trading

ONS Office of National Statistics

PO Producer Organisation

SFO Scottish Fishermen's Organisation

SFPO Shetland Fish Producer Organisation

TAC Total Allowable Catch

## 1. Scope and Intent of the Study

New entry into the Scottish fishing industry is commonly perceived as a self-evident necessity for the long-term prosperity of the sector and its absence a signal for government intervention. The Fisheries Minister Richard Lochhead recently said “*New entrants are the future life blood of the fishing industry and if we are to secure the future of fishing in Scotland we need to do all we can make a career in fishing more accessible for young people*”(Scottish Government New Release, January 2013). Similarly, the Scottish Fishermen’s Federation states “*For the long-term health of the Scottish fishing industry it is necessary to attract local new entrants*”.

Barriers restrict the movement of new workers into the industry in two ways - through conditions that; 1) limit the establishment of new owners and; 2) undermine the provision of an adequate supply of labour for established vessels that affect crew recruitment.

A low rate of entry into the industry by younger workers is perceived as a problem as, over time, it can produce an overall decline in the absolute numbers of fishers or a dependence on foreign workers. While it seems implausible that a financially viable fishing sector could ever ‘run out’ of workers, low rates of entry could change the nature of the industry with an ever greater proportion of foreign workers and a decline in the number of family-run firms. This may not be a problem from an economic perspective but it may run counter to socio-political concerns about the shape and structure of the industry.

Without the entry of younger workers into the industry, the age structure of the workforce changes and becomes dependent on older workers. The promotion of new young entrants is held as important for the renewal of the industry’s human capital, as new entrants are perceived as bringing motivation and new, innovative approaches when tackling the challenges facing the industry, there is however a lack of evidence either way on this point. The promotion of human and financial capital within fishing communities is also allied to the political commitment of the Scottish Government to protect the viability of coastal communities.

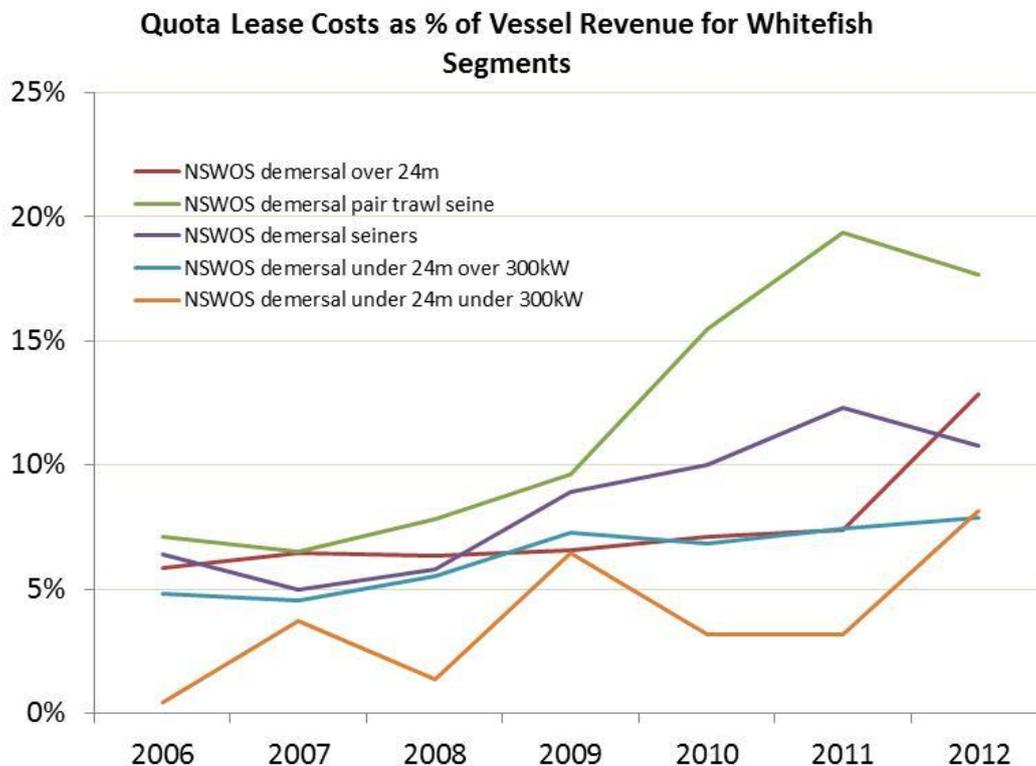
The remit of this paper is to test the underlying assumption of this narrative that prohibitive conditions exist that prevent new, young workers from entering into the Scottish fishing industry. The nature of these conditions and whether the situation warrants government intervention represent a central assessment. Within this, issues related to the retention of young crew and the balance between entry and exit will be discussed. Secondly, through an examination of the available evidence and the best theory and practice from around the world, potential policy responses will be analysed to outline their feasibility and likely impacts.

## 2. Identified Barriers to Entry

Barriers to entry exist across industries and represent anything from high start-up costs, brand loyalty and legal barriers that make it difficult for new entrants to break into a market or industry. The barriers to entry within the Scottish fishing industry are structural rather than strategic. Strategic barriers such as anti-competitive behaviour, collusion and predatory pricing are not applicable. Instead, the barriers to entry that affect the Scottish industry tend to be created by regulation and subsequent financial barriers, by cultural perceptions and through expectations about future wages and profitability.

**2.1 High start-up costs:** A common perception is that a key condition preventing new entrants from joining the industry is the high financial costs of entry. A new entrant must finance the purchase of a boat, a fishing licence and, if they intend to target species governed by a Total Allowable Catch (TAC), fishing quota. Specifically, the new entrants 'problem' has become closely associated with the price of buying and leasing quota.

Since the introduction of restrictive licencing, capacity aggregation and quota tradability, the cost of purchasing or leasing quota has increased dramatically as fishing opportunities have become concentrated in the hands of fewer operators. When entering the industry, new entrants have to compete with existing fishers who can only expand their operations by obtaining additional quota. Quota purchase and leasing costs have undeniably increased over time (e.g. see chart below) and are likely to rise further when the obligation to land all catches is implemented as part of the recently agreed reforms to the Common Fisheries Policy.



**Figure 1: Quota lease Coast as % of Vessel Revenue for Whitefish Segments. Source: Seafish**

While it is likely that the high start-up costs and limited availability of quota do create financial barriers to the entry of new fishers into the industry (Fig. 1), discussions with industry representatives suggest that the effect across the fleet is not homogenous. Vessel prices in some sectors can be considerable, with a second-hand demersal trawler or scallop dredger ranging in value from £100,000-£800,000. However, other sectors such as the inshore creel industry report relatively low barriers to entry as while a new fisher must gain a licence, a vessel can be bought for £5,000-£10,000 and the targeting of non-quota shellfish species is possible. High start-up costs will affect new entrants who intend to enter the industry by purchasing larger whitefish trawlers with the associated quota costs. However, there appears to be alternative low cost avenues for entering the industry at a lower level. It would also appear rational that new entrants who wish to become owners/skippers are unlikely to enter into the industry at the deep-end but work their way up through the industry as they build capacity, financial capital, quota and skills.

An issue raised by some industry representatives was that the short supply of quota does not just affect new entrants in relation to the associated start-up costs but as quota places a constraint upon existing vessels' business models the demand for new, young crew can be dampened. It was argued, for example, that quota constraints can prevent businesses from expanding and offering permanent positions to apprentices and trainees.

**2.2 Industry Exit:** Another identified barrier to entry is potential unwillingness or inability of the current, older generation to retire and exit the industry. An appropriate balance between entry and exit in the workforce is essential within a framework which limits aggregate vessel capacity. Entry of new skippers and vessel owners into the system depends on an adequate rate of exit to provide new entrants with recycled opportunities. If fishers do not leave the industry, this constrains new entrants' access to quota, licences and vessels. Moreover, if retired fishers choose to lease quota, as it offers financial security in the absence of a pension, this does not alleviate the issue of quota availability as quota leasing prices are high. In engagements with some stakeholders and industry experts high quota price was attributed to quota availability and a perception by some that internal leasing mechanisms are cumbersome and inefficient which in turn increases price.

The rate of exit depends on whether older fishers can retire and whether they want to. Older fishers may stay in the industry due to lifestyle choices. They may also remain in the industry because of debt or because they have limited pension provision. Highlighted in the ADAS 2004 report prepared for Defra on Entry and Exit into UK farming, one of the key recommendations was that financial assistance and information should be provided on retirement for older workers. The concept of low exit as a constraining effect on new entry was generally supported within the discussions with industry representatives. The fact that fishers do not generally have pension schemes was conveyed as a factor almost forcing the older generation to stay at sea, whether they have debt or not.

In fisheries the world over, subsidies are an important policy instrument. The rationale for the use of subsidies is that they will either be used to correct market failure (provide a public good or correct for an externality) or to redistribute resources in order to improve welfare. In Scotland, there are a number of direct and indirect mechanisms for supporting the industry. . These subsidies, however, can also have negative effects on the industry. A 2004 report by the Office of Fair Trading (OFT), concluded that subsidies can create market distortions that affect allocation, productivity and dynamic efficiency. In particular, it was highlighted that the

use of direct subsidies that cover fixed and variable operating costs affect firms behaviour and entry and exit decisions (OFT, 2004). The use of direct subsidies gives incumbent firms an advantage over potential new entrants. This facilitates a low rate of exit as recipients of these subsidies will be allowed to remain in the market when they may otherwise have experienced business failure and exited. This affects competition, with an artificially low rate of business failures making it difficult for new firms to enter the industry. While there may be good grounds for the various subsidy programmes which benefit the fishing industry, it is important to be aware that, in addition to their beneficial impacts, they may have unintended implications for exit and entry into the industry.

**2.3 Expected Returns on Investment:** Analysis of entry/exit decisions in the North Sea English beam trawl fishery revealed that the decision to exit or enter a fishery depends on the expected benefits of either action (Tidd et al., 2011). Given the operation of complex conservation regulation, new entrants may be discouraged from entering into the industry given the uncertainties created by regulation that affects the potential future revenue streams from fishing regulated stocks. For example, a Fixed Quota Allocation (FQA) holding provides an opportunity to receive a revenue flow from a fishery, however, as the quota is a percentage of a set TAC, the quantity in weight of fish landed is open to vary year on year, therefore creating uncertainty over future profit streams. Other regulations, such as effort controls and the upcoming landings obligation, are likely to produce uncertainty as well as economic factors such as prices and costs. Consequently low expected returns on investment may exacerbate the financial barriers to entry. If expected returns were high, the financial barriers to entry would be less of an issue.

**2.4 Acquiring knowledge and skills:** To gain a career at sea, potential fishers have to gain specific skills and qualifications. Education and training requirements can act as a barrier to entry as fishers must undergo basic safety training as well as specific oral exams for skipper and mates tickets. Access to education, in terms of funding, is often a constraint in many markets.

**2.5 Cultural perceptions:** The International Maritime Organisation (IMO) identified that in some parts of the world, particularly the traditional maritime countries, there is an apparent reluctance amongst young people to choose seafaring as a profession. The implication behind this trend is that the profession of 'seaman' in the OECD countries is becoming less attractive from the point of view of personal and even professional life. Cultural perceptions have also limited entry into Scottish farming, as potential new entrants have turned away from farming in favour of other, more financially secure professions (ADAS 2004). In Scotland, the fishing industry has strong competition from other marine careers, notably oil and gas, renewables and the merchant navy, that offer younger workers greater financial security. Despite this, a strong commonality across the industry engagements was that adequate enthusiasm exists amongst younger persons in Scotland towards a career in the industry.

**2.6 A role for government?:** While there are clearly barriers to new entrants and potential, though uncertain, benefits from increasing the rate of entry, the basis for any government intervention is less clear. It is broadly accepted that well-functioning markets in which price is determined by the interplay of supply and demand are an effective means of allocating scarce resources. Where markets do not function well i.e. where there are market failures, then markets may misallocate resources resulting in inefficient outcomes. Even where

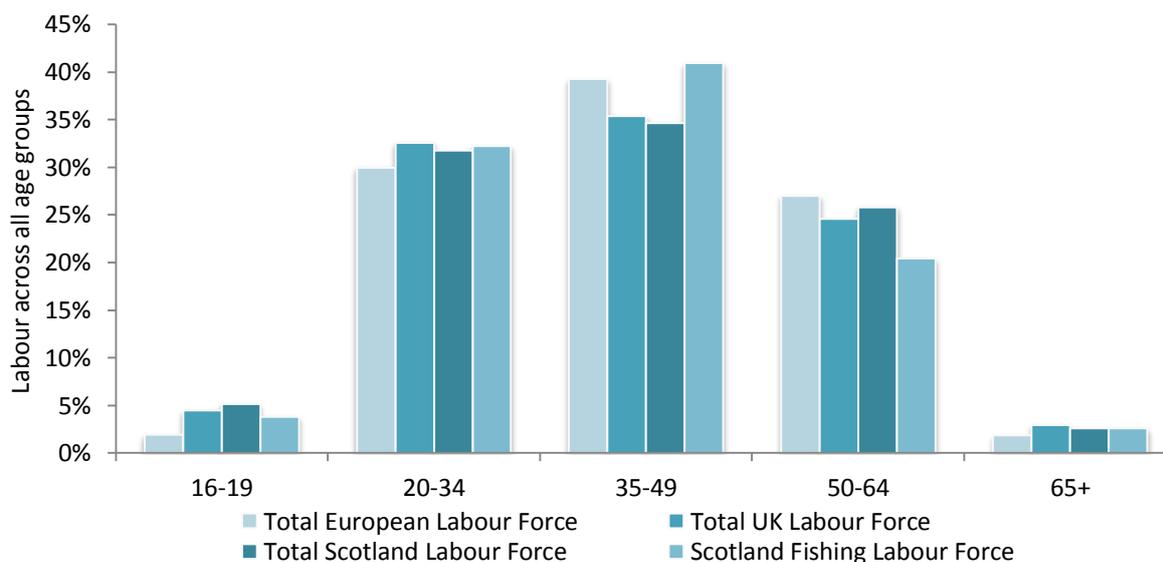
markets are efficient, they can lead to inequitable outcomes which are regarded as morally or politically unacceptable.

Government may seek to intervene to improve outcomes where there is market failure or significant concern about the distribution of incomes and wealth. It is not obvious that either of these situations prevails in the case of new entrants in the fishing industry, beyond minor failures in the availability of information and provision of training, and the case for government intervention is at best unclear even in theory. The Scottish Government Economic Strategy (2007) notes that “*without addressing significant market failures or legitimate equity concerns, government action risks crowding out private sector activity or creating new sources of inefficiency or inequity*”.

### 3. The Age Structure of the Scottish Fishing Industry: Is there a problem?

#### 3.1 The Age Structure of the Scottish Workforce

There is a perception that the workforce in the Scottish fishing industry is ageing. This coincides with a general trend of changing age structures in Europe, the UK, Scotland and global workforces. Figure 2 illustrates the age distribution of employees in the EU, UK, Scotland and the Scottish fishing industry in 2012. All labour forces follow the same general profile with the highest proportion of workers in the 35-49 year old age cohort followed by the 20-34 year old age cohort<sup>1</sup>. The UK and Scotland have higher rates than the EU as a whole in the 16-34 ages cohorts and lower rates than the EU for 50-64, suggesting younger workforces overall in the UK and Scotland.



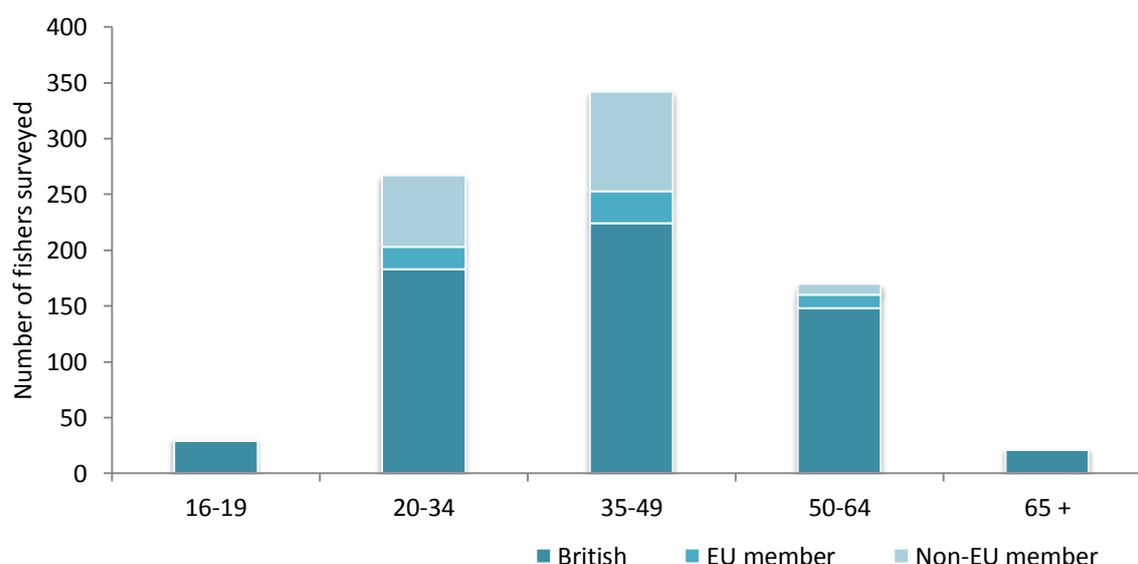
**Figure 2: Proportion of UK, Scottish and Fishing employment cross age groups in 2012. Data on the Scottish and UK Labour force was sourced from NOMIS (ONS 2014), EU Labour Force data sources from Eurostat.**

In the case of the Scottish workforce: there is a slightly higher proportion of older workers in the 50-64 cohort compared with the UK, however this is again lower than the proportion of workers in Europe. Overall because of the cumulative impacts of improved health, rising life expectancy, falling birth costs and the rising costs of financing retirements all workforce are ageing which has led to a re-evaluation of the traditional labour market withdrawal age (Office for National Statistics, 2013), with the default retirement age of 65 phased out from 2011 in the UK. As a result, the proportion of older workers in the labour force is expected to rise (Office of National Statistics, 2013).

<sup>1</sup> The data presented in Figure 2 needs to be interpreted with caution as the age groups are uneven e.g. 15 years contributed to the figures in the 20-34, 35-49 and 50-64 year cohorts whilst less years contribute to the 16-19 and 65+

### 3.3 The Age Structure of the Scottish Fishing Industry in 2012<sup>2</sup>

When compared to the age structure of EU, UK and Scottish employment, the Scottish fishing industry appears to have employed a proportionate number of younger workers: the average age of the fishermen surveyed was 39.4 years and the highest proportion of fishers are found in the 35-49 age cohort. There are fewer older (50-64) workers within the industry, which is also typical of the trends found in the total Scottish and UK workforce, as is the case for the 16-19 year olds but this is still higher than in the EU as a whole (Fig. 2). The industry therefore appears to have a relatively young workforce - with greater representation in the 25-34 age cohort, than the 50-64 cohort - most likely due to the industry's requirements for younger, fitter workers than the wider economy due to the physically demanding nature of the work.



**Figure 3. Age profile of Scotland fishermen by British, EU member and non-EU member nationalities. Source: MSS 2013 Survey of Fleet Employment (provisional)**

Recent data on the composition of the nationality of fishing crews suggests that foreign workers are contributing to the younger age cohorts - 20-34 and 35-49, accounting for 31% and 35% respectively of crew in those age groups in 2012. For the 16-19 year olds, all are British workers and just under 70% of the 20-34 year olds are British suggesting new workers are coming from a diverse range of backgrounds but that the majority are still British. Nonetheless, a significant proportion of the 20-49 age range is made up of Non-EU member workers. As this has the potential to increase over time, government intervention may be warranted in line with the Government's economic strategy and its aspirations for the fishing industry. This intervention could take the form of better and more regular monitoring of labour market trends in the industry over the next few years.

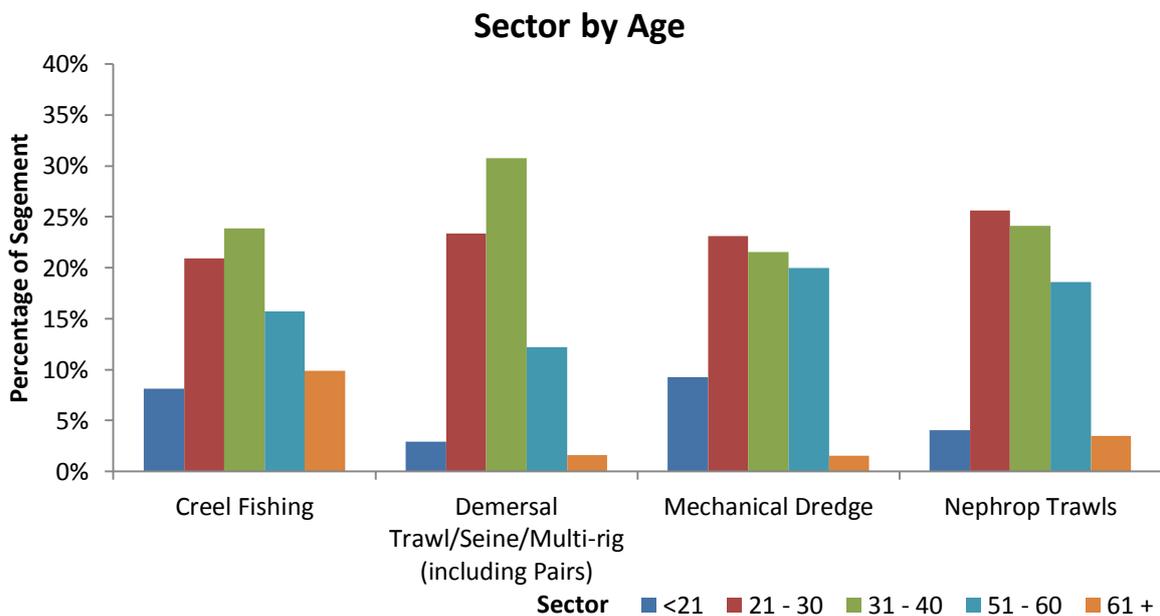
### 3.2 The Age Structure of the Global Fishing Industry

From a review of the available evidence concerning the age structure of the global fishing industry, it is evident that these trends are not distinct to Scotland. Internationally, national

<sup>2</sup> Provisional information regarding the age structure of the Scottish fishing industry is taken from the Survey of Fleet Employment in 2013, which surveyed 254 vessels and provided details on 844 fishermen about activity in 2012. This data has been present alongside the European, UK and Scottish data in figure 2 for comparisons.

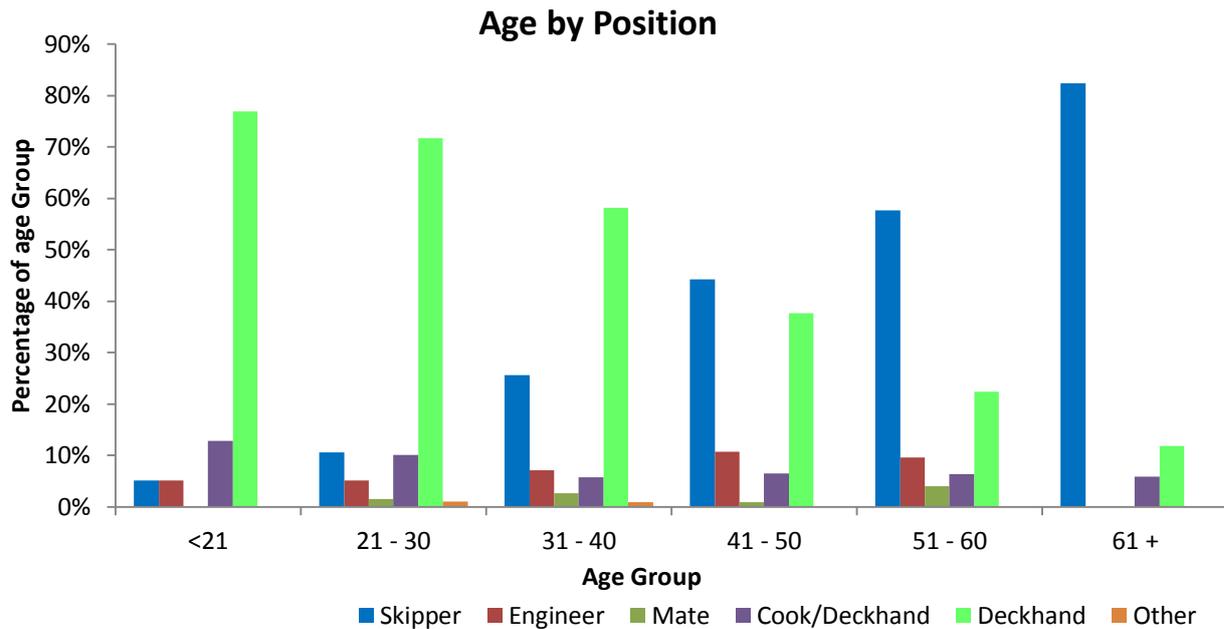
fleets are increasing employing foreign crews. The trend within developed nations is for a continued reduction in the number of young people entering the industry and an increased number of fishers over the age of 60 and the difference in balance is being made up by foreign workers. The literature shows this to be the case in France, the US, Japan and Australia (Institute for Regional and Rural Research, 2004).

Analysing the age structure of the Scottish fleet by sector provides greater insight in Scotland. For instance, it appears that in the demersal and Nephrops sectors, a smaller percentage of the workforce is under 21 compared to in creel fishing and mechanical dredge sectors (Fig. 5). Moreover, in the creel fishing, Nephrops trawls and mechanical dredge sectors there is a higher dependence on workers over the age of 51 in comparison to the demersal fleet.



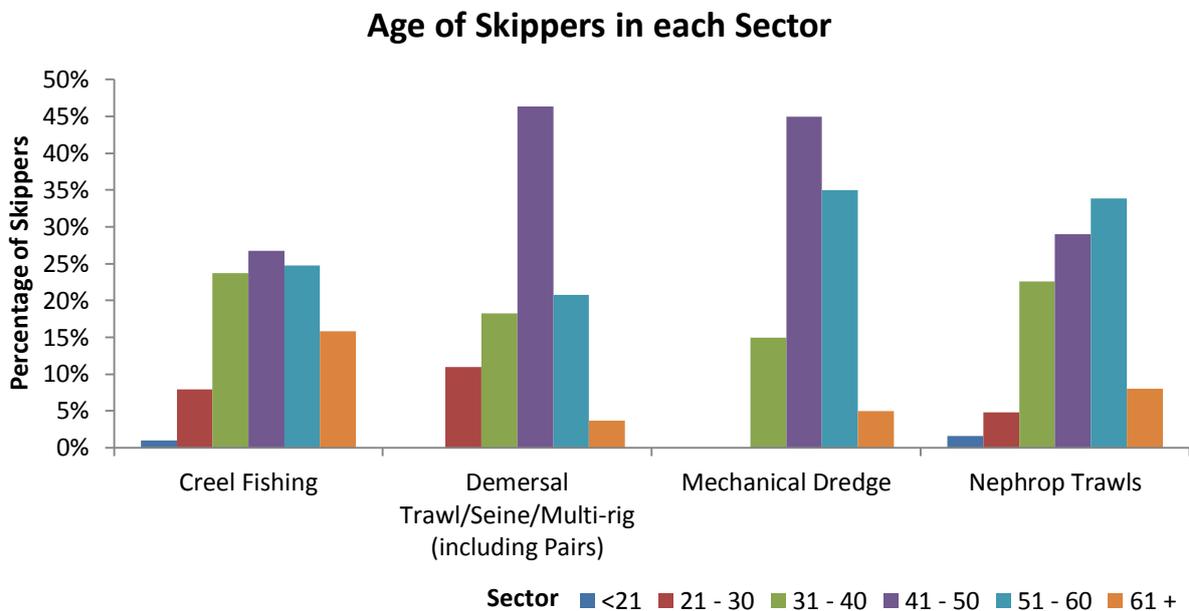
**Figure 5. Sector by Age. Source: MSS 2013 Survey of Fleet Employment (provisional)**

When breaking down the age cohorts by position, it could be surmised that it is easier for a young fisherman to gain a position upon a vessel as a deckhand (Fig. 6). The data also demonstrates a positive relationship between age and position held as skipper, therefore, it would appear less young fishers enter at this position. This cannot automatically be regarded as evidence of a barrier to entry (financial cost of acquiring vessel and quota) as it is rational that younger fishers enter the industry as deckhands and transition to the position of skipper over time as experience and income is accumulated.



**Figure 6. Age by Position. Source: MSS 2013 Survey of Fleet Employment (provisional)**

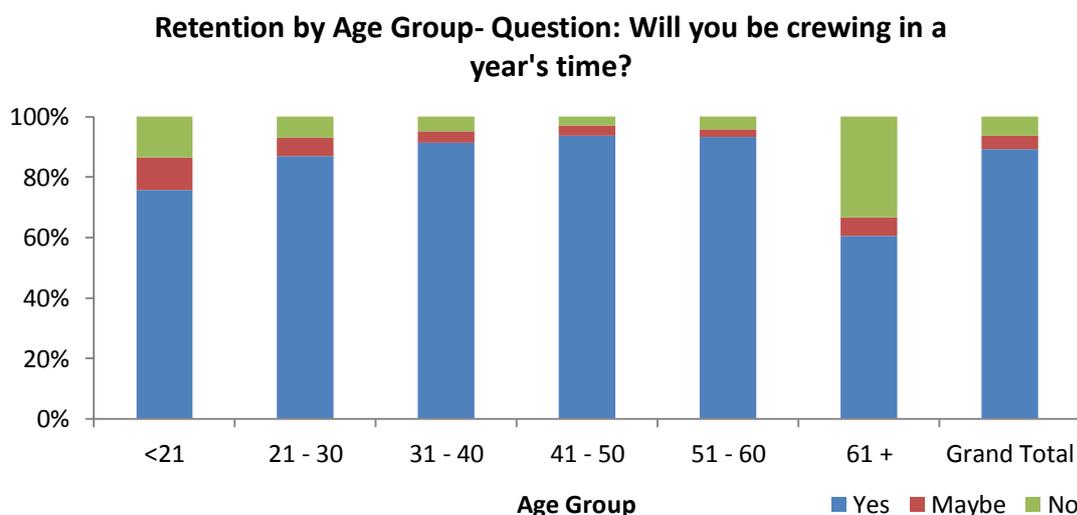
Breaking this down by sector, there appears to be fewer young skippers in the demersal and mechanical dredge sectors (Fig. 7). The mechanical dredge sector in particular shows an overreliance on older skippers, those over 41, than in the other sectors. As the position of skipper is overwhelmingly held by older fishers over the age of 51 an issue for new entry may be that if older fishers/skippers refuse to leave the industry (either due to a lifestyle choice or debt) this may affect the recycling of quota, licence and vessel ownership opportunities to younger fishers.



**Figure 7. Age of Skippers in each Sector. Source: MSS 2013 Survey of Fleet Employment (provisional)**

**3.4 Retention of young workers:** The retention levels amongst younger fishers may also be an issue affecting the age structure of the Scottish industry. In the industry engagements,

this was flagged by all representatives as a barrier. One informant commented that good fishermen tend to leave the industry as their skills are transferable to the Merchant Navy, the offshore sector in the North Sea and the renewables sector in Holland, with the catching sector unable to match the good terms and conditions offered by these industries. A point made was that retention was not only undermined by competition from other marine sectors, but that uncertainty within the industry itself was a problem affecting the enthusiasm of young workers. A consensus was that amongst young people around the coast, enthusiasm towards the industry exists. It was felt by industry representatives that if the problems facing the industry (specifically in relation to the problems of gear conflict and competition for ground for the inshore sector) could be improved, the industry could present itself as a more attractive package and this enthusiasm could be harnessed.



**Figure 8. Retention by Age Group: “Will you by crewing in a year’s time?” Source: MSS 2013 Survey of Fleet Employment (provisional)**

Evidence within the 2013 Survey of Fleet Employment supports the notion that retention is an issue amongst younger workers. Of the under 21s, 14 per cent were sure that they would not be crewing in a year’s time, with 11 per cent unsure if they would remain in the industry (Fig. 8). Aside from the over 61 age group who had the lowest level of retention, most likely on account of the prospect of retirement, retention appears to affect the youngest age group the most.

Data collected from a series of key informant interviews with POs and industry fishing associations indicates that the factors influencing lower retention rates amongst younger fishers are the work and pay conditions the industry offers. Working conditions in the catching sector were stated as less attractive because the work is physically demanding and dangerous and there is a high degree of uncertainty over working patterns e.g. when and for how long the vessel will be at sea. In an interview with a PO based in the North-East of Scotland regarding the issue of new entry, it was commented that trainees tend to last only a few trips: as the work is hard, they either move to go on a smaller boat or else into the oil industry. All sectors spoke of weather conditions having the potential to undermine the security of receiving a weekly wage. This is not necessarily all negative as it is worth noting that young people in rural areas use the industry to gain experience to access other marine careers, with a host of benefits of rural areas as a whole (Jones, 2013). Equality in most

industries it is expected that young people will likely try a job for a period of time before deciding it is not for them, therefore it is hard to confirm whether this is a particular problem for the fishing industry or the general behaviour of young people finding suitable and enjoyable employment.

**3.5 Competitiveness of the Scottish Fishing Industry** Compared to other sectors such as oil and gas and marine renewables who can offer greater security over working patterns, the average wages across the fishing sector are less in comparison. Therefore, the often unattractive nature of the work is not necessarily offset by a comparable financial pay-off, which the aforementioned sectors can guarantee.

**Table 1: Estimate of wages for selected Scottish fleet segments, average 2009-2011**  
**Source: Marine Scotland estimates based on Seafish data. UK wage data from ONS and gov.uk**

	Average per crew member Wage £
Scallops over 15	36,693
NSWOS demersal over 24m	36,637
NSWOS demersal pair trawl seine	36,042
NSWOS demersal under 24m over 300kW	30,190
NSWOS demersal seiners	29,547
NSWOS demersal under 24m under 300kW	26,001
North Sea nephrops over 300kW	20,877
WOS nephrops over 250kW	17,757
Pots and traps over 12m	17,561
North Sea nephrops under 300kW	15,568
Scallops under 15	11,787
Under 10m demersal trawl/seine	9,902
Pots and traps 10-12m	9,061
WOS nephrops under 250kW	8,363
Under 10m pots and traps	6,290
<b>Equal or greater than UK median wage</b>	
<b>Greater than minimum wage but less than median</b>	
<b>Less than minimum wage</b>	
<b>UK Minimum Wage (assume 40hr week)</b>	12,500
<b>UK Median Wage</b>	26,200

In terms of wages across the fleet, some sectors fair better than others when compared with the UK average (not accounting for hours worked which are generally higher than the UK average). The North Sea and West of Scotland demersal over 24 meter, pair trawl and seine fleet are estimated to award average wages above the UK median wage, with the over 15 metre scallop dredge offering very attractive wages (Table 1). Wages on Nephrops vessels are relatively low on average and do not compare well to the UK median wage. Wages in the static gear segments are also low, sometime below minimum wage although this may be due to part time nature of the work rather than low wages per se. One possibility is that if the profitability of the vessels targeting Nephrops could be improved (Table 2), better wages could be offered thereby attracting new entrants into the sector. The issue of profitability and wages as a barrier to some sectors was identified within the talks with industry representatives. For instance, it was commented that the pelagic sector does not experience issues with recruiting new, young labour as it is able to offer high wages. It was also

commented that the recruitment of young crew is more difficult in the mobile sector as opposed to the static sector due to high operating costs and the current crew share system. Moreover, two POs stated when there was relatively more young people entering the industry over 20-30 years ago, this was driven by their ability to earn a much higher wage. Through the industry engagements, there was a strong consensus that if the labour supply of the catching sector is to be improved, a key mechanism for achieving this is to improve the economic performance of the industry. It is through increased profitability that better wages can be paid, which will incentivise younger workers to enter and remain in the industry.

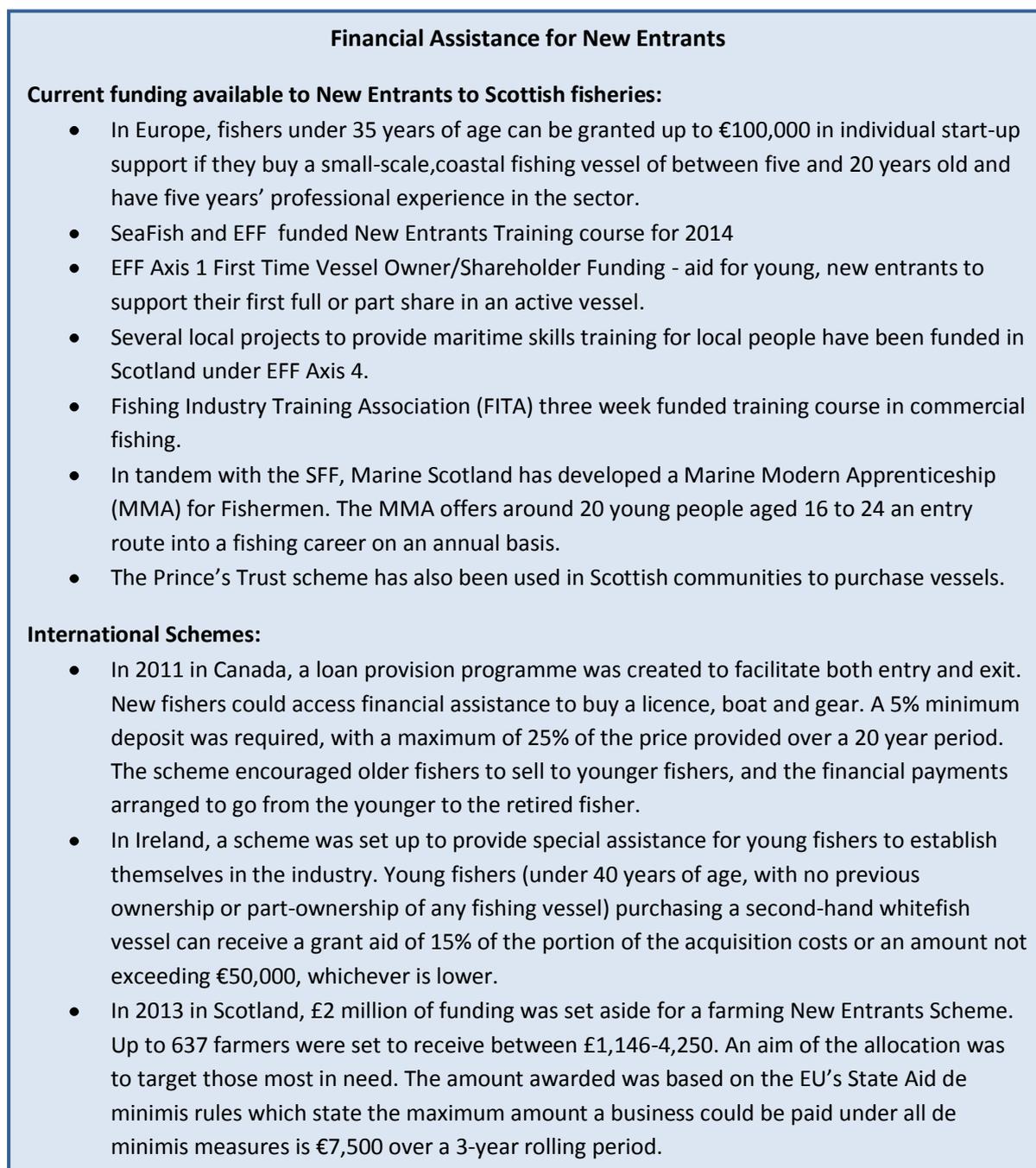
**Table 2: Estimate of profits for selected Scottish fleet segments, average 2009-2011 Source: Seafish**

	<b>Average per vessel Profit £</b>
<b>Scallops over 15</b>	128,719
<b>NSWOS demersal seiners</b>	57,505
<b>NSWOS demersal under 24m under 300kW</b>	48,867
<b>NSWOS demersal pair trawl seine</b>	37,344
<b>NSWOS demersal over 24m</b>	35,682
<b>NSWOS demersal under 24m over 300kW</b>	31,187
<b>Pots and traps 10-12m</b>	15,910
<b>WOS nephrops under 250kW</b>	12,889
<b>Pots and traps over 12m</b>	11,848
<b>Under 10m demersal trawl/seine</b>	11,531
<b>North Sea nephrops under 300kW</b>	10,346
<b>WOS nephrops over 250kW</b>	9,498
<b>Under 10m pots and traps</b>	8,472
<b>North Sea nephrops over 300kW</b>	4,434
<b>Scallops under 15</b>	1,918

## 4. Potential Policy Responses

### 4.1 Providing financial assistance to new entrants

An internationally recognised method of reducing financial barriers to entry into industries such as fisheries and agriculture are government sponsored financial assistance schemes. These can take the form of subsidies to cover the capital requirements of entering the industry and/or the skills and training requirements. Figure 9 provides an overview of the financial assistance schemes used to facilitate new entry into the Scottish fishing industry and similar international schemes in operation.



**Figure 9: Financial Assistance for New Entrants**

**4.1.1 Financial Assistance for Training:** From the interviews with the industry representatives, an industry perception is that training for new entrants is generally good. The promotion and funding of skills, education and apprenticeships is highlighted as an important role for the government in encouraging new entrants, a process traditionally promoted within fishing communities through familiar and kinship ties. Specific attention was given to the FITA 3-week training course that enabled new entrants to gain the necessary certification to be legally employed on UK fishing vessels and after 18 months offers the opportunity to progress to gain an under 16.5 metre skippers ticket covering bridge watch keeping, engineering, stability and radio. While this was identified as a good course, it was noted that funding for the course will cease from 1 April 2014. It was commented by the Western Isles that this had proved a highly valuable asset for the community and a way forward for the government to support entry is to continue funding this course. It was noted that while the new Modern Marine Apprenticeship (MMA) was a useful tool for areas that had a good local college framework, for more remote areas a dual-approach was needed to make funded training opportunities accessible across the country.

In a similar vein, the Shetland PO recently expressed concern that Scalloway's NAFC Marine Centre is facing further funding cuts that would harm the college and local fishing industry. The NAFC Centre provides a myriad of important services to the local community, including data collection and policy development as well as the provision of training for young people who want a career in the industry and for existing fishermen.

A general consensus within the industry engagements was that programs that are already well-established and fruitful should not be overlooked in an attempt to produce something 'new'. A potentially popular and effective policy response would therefore be to continue and/or increase Government support and funding for the programs identified as important by the industry. This could facilitate an expansion in capacity in these services that have a proven track record, as opposed to looking for new avenues to invest in which could spread available finances too thinly to be effective. A comment from two POs was that while training for the catching sector was important, opportunities could be tweaked to be more dynamic. Specifically, it was noted that training is needed for a variety of areas that all work to support the catching sector. Training is needed for new fish filleters in the processing sector, to train new fish salesmen, marine engineers and port workers such as electricians. A perception was that workers in these positions were aging as well. The concern was that a shortage of workers in these ancillary services increases the costs for firms in the catching sector. Another request was for supplementary training to be given to existing crews. One option discussed was to provide training that adds value to the catch, for instance on fish presentation at market.

**4.1.2 Financial Assistance for Ownership:** Figure 7 outlines some of the schemes through which financial assistance is offered to those wishing to establish ownership in the industry. The financial assistance available to new fishers is potentially quite substantial, specifically in relation to the purchase of a boat.

In addition to the government schemes, there are several private-industry schemes in operation around Scotland that facilitate new ownership. The Outer Hebrides have developed a number of programs that aim to create and retain employment opportunities in the area through supporting business development for those wishing to enter the industry. The Outer Hebrides Fisheries Support Scheme (OHFSS), a partnership between Comhairle

nan Eilean Siar, Royal Bank of Scotland and Western Isles Fishermen's Association finances low risk business plans in order to facilitate new, local entry into the industry (Fig. 10). Financial assistance is available for individuals to purchase a fishing vessel of less than 24 meters in length and between 5 to 30 years old. Loans of up to 40% of eligible costs are available up to a maximum of £100,000, with a repayment term of 10 years. The local fishing association and local authority identify low risk cases and support them through the process. The costs to the local authority are reportedly to be remarkably low, with an estimate of around £1,200 over a ten year period. It is reported that over the last 10 years, over 100 projects have been financed, with average loans around £150,000.

In addition, fish processors Macduff Shellfish have recently initiated a program that makes available up to £250,000 in interest free loans that fund local business models in purchasing vessels. It is also reported that several other vessel-ownership schemes are funded by processors on Islay and Barra. The processor's motivation in investing in the community was to ensure that it was guaranteed adequate supplies. In a similar line to the OHFSS, this business model has been facilitated by using local authorities and fishing associations to identify low risk parties. A lynchpin of the Outer Hebrides' successful approach to new entrants is the creation of a central information point for the new candidates (either in accessing training or moving into ownership and employment), in assessing low risk business plans and for local companies that wish to facilitate loans. In the Outer Hebrides this role appears to fall chiefly upon the local fishing association but also within the local council.

#### **Eligibility Criteria for the OHFSS Scheme**

- Applicants must be under 40 years of age and can demonstrate that they have worked at least five years as a fisher or have equivalent professional training
- Applicants must be acquiring for the first time part or total ownership of a fishing vessel
- The vessel acquired must be less than 24m in overall length, equipped to go fishing at sea and be between 5 to 30 years old.
- Eligible businesses must have fewer than 50 employees.
- Businesses must operate on a full-time basis.
- Applicants must be resident and maintain a business in the Outer Hebrides throughout the period of the loan.
- Applicants must complete the Application Form/Letter of Consent and submit a Business Plan including projected financial statements for 3 years. New applicants must also submit 6 months personal bank statements or, in the case of existing businesses, 6 months business account bank statements.
- Only sole traders, partnerships, limited companies and co-operatives are eligible for assistance.
- Applicants will be asked to demonstrate that other sources of funding relevant to their project have been approached.

**Figure 10: Eligibility Criteria for the OHFSS Scheme**

A key component of the Outer Hebrides approach is to practice a positive attitude in relation to non-local labour. There is often a tendency to look at non-local labour in the short-run. However, the experience within the Outer Hebrides is that non-Scottish, EU workers interested in participating in the industry represent a viable investment that create numerous multipliers as most have families in the area and are well integrated. There is therefore evidence that non-Scottish EU new entrants can provide a positive future for the industry. An

option going forward is to facilitate greater linkages between the completion of training programmes, apprenticeships and work on vessels. In the evolving Shetland New Entrants Scheme, this idea is being put into place by the Shetland's PO. Social pressure and economic incentives are being used to encourage vessels to hire the recent graduates of training programmes as opposed to relying upon agencies for cheaper workers. While this is already working at a local level, this could be encouraged nationally by disseminating information on schemes being operated in order to encourage similar practices elsewhere.

#### 4.2 Providing quota for new entrants

A popular method of accommodating new entrants in the agricultural industry is to ring-fence a proportion of the total quota. There are several mechanisms that can be used to create this pool. Quota banks can be used to accommodate new entrants as lower lease rates can be charged to new fishers. This mechanism exists in Denmark, where fishers group quota in 'Fish Pools' that tend to be managed on a private basis. The objective of the Fish Pools is to promote transferability and reduce the costs of trading quota on the market, with pooled quota accessed via an online trading scheme. When quota is pooled in such a way, the opportunity exists to top slice a proportion of the pool and reserve this for new entrants, to whom it is loaned at low cost. This 'Fish Fund' has strict criteria in terms of who may access the reserved quota with access dependent on age and ownership status in vessels, with successful entrants receiving quota free of charge for a period of 4 years, with this reduced by 25% in 4 successive years. Typically, the policy of setting aside quota for new entrants can raise several challenges such as decided how much quota to reserve, who would be eligible and issues of equity and efficiency which may arise if quota is taken away from established fishers.

A similar system is operated by the Shetland PO and in the Outer Hebrides and conceivably a similar process could be administered within Scotland by the POs or by central government. There are several ways in which a quota pool for new entrants can be achieved, for example through orchestrated reductions in existing allocations, the ring-fencing of TAC increases, government buy-back schemes or the top-slicing of FQA sales.

##### International Examples:

- In Ireland, following the agreement of the Council of Agricultural Ministers in 2008 to increase MS milk quota by 1%, in June 2011, the Minister for Agriculture, Food and Marine announced that one quarter (0.25%) of this increase would be allocated on a permanent basis to New Entrants to Dairying in 2012. The eligibility requirements for this included; specific education and training qualifications; specific capital requirements such as land, herd and storage facilities; and the production of a comprehensive five years Business Plan. This facilitates a maximum of 50 new entrants.
- In 2013, DARDNI allocated out 11 million litres of milk quota to 55 new entrants. Over a 5 year period the New Entrants to Dairying Scheme has facilitated over 400 farmers into dairying.
- In 2013, Egg Farmers Ontario (EFO) announced a new entrants scheme where over a period of 10 years, 50,000 unit of egg quotas would be available for loan. The scheme awards individuals up to 5,000 units of egg quota, and the loan is based on a 1:2 ratio (1 unit purchased, 2 loaned). The intention is that after 10 years the loaned quota will be returned to the EFO in annual instalments of 20% each.

**Figure 11. International Examples of Quota Provision**

**4.2.1 Proportionate reductions in existing allocations:** A mechanism used to facilitate new entry into high seas fisheries uses proportional reductions in existing members' quota holdings to create a pool of quota for new members (OECD, 2009). This mechanism is more appropriate for international rather than national fisheries as in the former there will exist an allocation that allows existing and new members to be better off cooperating rather than not cooperating. The threat of free-riding works as an incentive for existing parties to relinquish a proportion of their quota. This condition does not exist to the same degree within national fisheries. Moreover, even within high seas fisheries the creation of quota for new entrants is undermined in practice by what Kahnemann et al., (1990) described as the 'endowment effects'. The endowment effect recognises that countries are likely to place a greater value on the certain current allocation than on an uncertain future allocation, even if the expected value of the future allocation is greater. In practice, the uncertainty over the future gains renders members reluctant to surrender some quota.

The issue facing Scotland is that while the industry may support the importance of a new entrants scheme, rational operators would be unwilling to see a reduction in their quota holdings in order to accommodate new competitors. Existing operators traditionally benefit from barriers to entry as they offer protection against competition from new operators who compete for market share. Further, an issue highlighted by the industry was that this mechanism also raises concerns over efficiency. New entrants are likely to be less efficient users of quota than experienced fishers, at least in the short run and the transfer of quota to new operators may reduce the net value of the fishery although this effect may be more than compensated for over the longer run.

**4.2.2 Ring-fencing of TAC up-lifts:** Changes in the TAC are distributed amongst existing fishers in relation to their proportional holdings of FQAs for each stock. A more acceptable method for creating quota for new entrants is for fishery managers to hold back some proportion of any TAC increases from the existing fleet and ring-fence these opportunities for new entrants. Under this arrangement, existing fishers would fish at least the same amount as the previous year, therefore suffering no direct reduction in opportunities. As within the previous mechanism discussed, access arrangements would then be put in place. New entrants could access the quota through an auction, lottery, or the use of pre-defined criteria such as age, certain experience, qualifications, or access through an apprenticeship scheme. One option is to create a link between apprenticeships and training courses and access to New Entrants quota, thereby increasing the impact of the training schemes.

While this mechanism may appear more acceptable than removing quota from existing fishers, in practice it too produces issues of efficiency, equity and acceptability. Firstly, TAC increases are in no way certain. Therefore this mechanism may be subject to year on year fluctuations. Secondly, TAC increases are unlikely to produce new quota holdings that reflect the true catch composition. While an increase in the haddock TAC will increase opportunities for the prosecution of this species, under the landings obligation it is likely that fishers will have to acquire quota for the bycatch of haddock, such as whiting or cod. Acquiring this additional quota could prove difficult as financial capital is in short supply. If quota holdings representative to true catch is not held by new entrants, they will either be forced to land illegally or limit operations at the binding TAC. Additionally, issues of inefficiency may arise in the short run as improvements in fishing opportunities are reserved for the potentially less efficient new entrants.

A final issue is that the option of ring fencing TAC increases for new entrants offers only an ostensible option in terms of fairness and acceptability. Changes in stock abundance are produced by an amalgamation of factors; however one driver is the impact of conservation measures that limit fishing mortality. These limits force fishers to carry short-run economic costs as they adhere to conservation measures such as reductions in catch quota, effort quotas, gear restrictions and spatial and temporal closures. Fishermen have largely accepted these often substantial short run costs on the expectation that they will eventually be rewarded by future long-run increases to the revenue streams coming from stocks as TACs are increased. If the benefits of such action are not awarded to these actors, but instead allocated to new entrants, this implicit bargain between managers and fishermen is significantly undermined.

**4.2.3 Government Buy-Back/ Top Slicing of FQAs Sales:** An alternative mechanism in setting aside quota for new entrants is to facilitate a government buy-back scheme. As part of a settlement with Maori tribes, the New Zealand government had to buy back quota from the market, with this mechanism also floated by Poland and Italy in order to allow for new entrants to enter the EU Emissions Trading Scheme. Once the quota has been acquired, this can then be leased to new entrants on a prearranged basis.

One option that may become available to the Scottish Government under the plans to alter quota management arrangements is the ability to top-slice a small proportion of FQAs when they are sold. This quota would then be ring-fenced for a new entrants scheme, such as young fishers coming out of training programmes and apprenticeships. This could be used in the same fashion as the Shetland scheme, by using the quota as an economic incentive for vessels to take the young fishers on as crew. Some form of loan system could be set up, such as in the EFO or Danish Fish Fund programme where the quota is leased to new entrants as a low interest quota loan. Over time, the loan (quota) would be returned to the government in instalments, allowing it to be allocated to other individuals.

**4.2.4 Industry engagement:** One clear theme emanating from discussions with the industry on the issue of new entrants and possible policy responses is that certain sections of the industry believe that the provision of quota to new entrants should not be a role taken on by the government. Instead, it was mentioned that any transfer of quota between the existing fleet and possible new entrants programs should be left to the industry to decide upon. This view is likely to be shaped by nervousness amongst existing fishermen of the government administering reductions in current or future quota holdings. It was commented that control of this mechanism should remain within the industry, either at PO or community level. One strong perception from POs representing the North-East was that providing quota for new entrants was a red herring as there were so very few young people interested in joining the industry. For those that did have the passion, it was likely that their drive would allow them to enter into the industry anyway, with the hardship making them a strong and determined fisherman. One Fishermen's Association representing the inshore sector commented that one policy that could be welcomed was an increase in licences. In line with EU capacity limitations, the Scottish Government is able to create more licences. These could then be ring-fenced for new entrants if they were able to purchase a vessel with no licence attached. If the fisher then decided to move on to another vessel, the licence would be returned to the new entrants pool and re-allocated.

### 4.3 Community quota holdings

Encouraging communities to hold quota is a direct way of supporting fishing communities and has been used in Iceland and in the US to facilitate new entrants schemes. Once a community quota holding has been established, control over how the quota is used lies with the community. Quota can then be leased or sold to young members of the community so as to lower barriers to entry. This policy is attractive as it works to alleviate anxieties over the impact of quota trading and fleet consolidation on the economic viability of fishing communities (GAO, 2004).

Community quota holdings operate in the Alaskan halibut and sablefish fishery and, in New Zealand, the Chatham Islands Community Trust receives quota allocations from New Zealand fishery management which it leases out on an annual basis to community fishermen. However, the most prominent example of a community quota holding that facilitates new entry is the community based management initiative in Shetland. The Shetland's community quota was purchased by both the Shetland's Fish Producer Organisation (SFPO) and the Shetland's Island Council (SIC). The scheme was initiated by the SFPO in 1993, which began purchasing quota from decommissioned vessels and using the holdings to augment members monthly quota allocations. The SIC then began to invest in quota to create a pool of community held quota, which has been used to help new entrants get started in the industry. The SIC pool is managed by the SFPO, but held aside for fishers who cannot afford to purchase quota. The Shetland's New Entrants Scheme attempts to help young fishers who lack the capital to enter the industry. New entrants use the quota to become members of the SFPO and fish out of the general quota pool despite not owning any individual quota. The new fishers pay a proportion of their gross earning to the SFPO as 'rent' for share of the community quota. To date a number of "new entrants" have been able to acquire a boat and licences and start fishing without having to purchase quota. The rental income for the quota and the appreciation in quota values offers the ability to continue to invest in quota.

The Shetland PO is in the process of designing a new scheme that attempts to link newly qualified fishers with placements on vessels. While the training courses are valuable, experience on a vessel is necessary for young fishers to increase their skills and capacity and promote them to a good standard. The SFPO has identified that due to the distinct pattern of ownership in Shetland- where, for instance, 6 out of the 7 crewmen own a share in the boat and only one or two crewman are outside of this ownership structure- it can be hard for young fishermen to gain establishment on boats. In response, the SFPO has designed specific social pressures and economic incentives to foster this link. As well as promoting the use of new, young workers as apprentices on board vessels, the SFPO used the quota pool to incentivise this. If a new trainee is taken on board a vessel, the SFPO grants the vessel additional quota from the pool to cover the expected costs, which are estimated to be in the region of £10-£12,000 per annum. The current intention is to use the quota pool to help create opportunities for 3 or 4 new starts a year, with the quota pool ring-fencing up to £150,000 of quota. The SPO see this scheme as requiring several commitments: one from the young trainees to sign up and apprentice on board, one from the existing vessels to hire more expensive new starts as opposed to cheaper agency staff, and a sacrifice across the whole PO as quota is siphoned off from the PO's quota pool.

In Scotland, community quota holdings are also held as an asset in the Outer Hebrides. Several years ago, the local authority chose to invest £500,000 to purchase Nephrops quota. This quota is held within the Scottish Fishermen's Organisation and the Orkney PO and ring fenced for new entrants and is leased at a significantly lower rate than the market price for purchasing quota. This quota is not only leased to local operations but was recently leased to an Irish vessel that lands locally.

Theoretically, the Shetland and Outer Hebrides models representing a form of community held quota could be replicated in other Scottish POs and communities. The Shetland PO is, however, in a fortuitous position in that it already owns this quota and does not have to raise the financial capital to create a new entrants pool. This would not be the case if a new community/PO scheme was to be encouraged. As experienced in the Alaskan Halibut and Sablefish fishery, the creation of community quota holdings can create several problems. While the programme did not encompass a specific new entrants function as in the Shetland's example, its operation highlights the problems in practice associated with community purchasing. The North Pacific Community Quota Entity Programme (CQE) was created by the North Pacific Fishery Management Council in 2002 as a policy response to the steady decline in total quota held by small, coastal communities since the introduction of IFQs in the 1990s (CQE Review, March 2010). The intent was to allow eligible communities in specific areas to purchase commercial IFQ halibut and sablefish quota shares to lease to community residents. The aim was to create a permanent asset for the community, for it to use on behalf of its residents such as by leasing quota to individuals who were unable to purchase quota themselves.

Based upon agreed criteria (Fig. 12), 42 communities were identified for inclusion in the programme. The communities had to form non-profit organisations to manage the quota on their behalf, with the CQE placing limits on how much quota could be purchased by each community and by individuals within. Allocation at a community level aims for an equitable distribution across the community. However, the criteria and weighted used when allocating internally differs across communities.

<b>Alaskan Halibut and Sablefish CQE Allocative Criteria</b>
<p><b>Community eligibility:</b> fewer than 1,500 people; documented historical participation; direct access to saltwater; no road access to a larger community; and listed in Federal regulation.</p>
<p><b>Quota allocation criteria:</b> individuals must have lived in community for 12 months prior to application and preference given to residents in terms of; gear type, age, how many local residents employed and experience.</p>

**Figure 12. Quota Access Criteria in the Alaskan Halibut and Sablefish CQE Programme**

A 2010 review of the CQE concluded that while the programme could be viewed as a success, the efficacy of the programme had been undermined by funding issues. Due to an increase in the price of quota and other market realities, it had proven very difficult for communities to finance quota purchases in the absence of grant money. In response, the State of Alaska facilitated a loan programme to communities in order to finance the CQE programme. The likelihood is that Scottish POs and communities would face similar financial problems when acquiring quota and would require some form of financial assistance from the government. Moreover, if some communities were able to purchase quota while some

weren't, this may lead to some communities calling for financial help in order to compete and protect their operations against the increased competition for quota. If communities began buying up quota, this would most likely lead to an increase in the price of quota, which would have a negative impact on other communities and individual operators and may constrain quota availability at a national level. Government involvement in the financing of community purchases is likely to be a controversial process with the potential for unintended consequences.

Another issue with community quota holdings is that they have the potential to sustain inefficiency within the fleet, as the ring-fencing of quota by communities - while producing the desired social objectives - can prevent quota from travelling to more efficient operators and regions. A concern expressed in the industry interviews was that allocating out quota on the basis of community preference and to new entrants - who are generally less efficient than established fishermen - will see the subsequent price increase unaccompanied by a concurrent increase in efficiency. The objective of quota transferability is to facilitate the concentration of quota in the hands of the more efficient operators, allowing the inefficient to exit (Maloney and Pearse, 1979). Given that community quota schemes restrict tradability and are likely to preferentially award quota to less efficient operators such as new entrants and those typically unable to purchase quota on the market, a potential efficiency loss is likely.

**4.4 Facilitating Industry Exit:** The concept of low exit as a constraining effect on new entry was generally supported within the industry engagements. The fact that fishers do not generally have pension schemes was conveyed as a factor almost forcing the older generation to stay at sea, whether they have debt or not. In ADAS's report on entry and exit in UK farming, it was reported that the low rate of exit reflected that many older farmers did not want to retire, not that they are unable to, with only around one-third of farmers reported to have intentions to retire completely. Following on from the recommendations of the ADAS report, one option is for Marine Scotland, the wider Scottish Government and the Department of Work and Pensions to proceed to produce an advice pack on retirement and succession for the industry. Advice on these issues could be more widely incorporated into the advisory services offered to the industry.

#### **4.5 Changes to quota management**

Changes to current quota management arrangements could help alleviate conditions that prohibit new entry as they could be tweaked to make quota more widely traded and available (transferability) or to improve the efficiency of trading mechanisms to reduce transaction costs. Moreover, open and transparent trading mechanisms can help improve economic performance through encouraging the more efficient use of available quota.

**4.5.1 Increased tradability:** The Scottish government is consulting on possible changes to the quota management system. One option is to create long term fishing rights, the so-called 'stewardship rights' and/or the condition that FQAs need to be tied to a licence. This second option could be used to facilitate a more transparent and efficient market for quotas, which could allow for real-time swapping. One of the reported issues affecting the fleet is the high price of quota, in particular the costs of leasing quota. Young fishers do not necessarily have access to sufficient capital for purchasing quota, therefore by leasing quota they can participate in the fishery while building up savings. By removing the link between FQA

holdings and licences, an online trading platform could be established that would facilitate information sharing, transparency and efficiency. The current FQA market, run by POs and lacking in transparency, is likely contributing to the inflated prices paid to buy and lease FQAs. A public record of FQA sales and some sort of privately run online trading platform could aid new entrants by creating a downward pressure on lease prices.

**4.5.2 Limits on the concentration of quota:** One option is to place concentration limits upon how much quota any one participant can hold. This mechanism has been used in several international fisheries and typically represents a restriction on the percentage of the annual allocation that an individual can hold (Table 3). Internationally, the range of limits sets varies widely, from 0.5-1.5% in the Alaskan Halibut and Sablefish Fixed Gear IFQ Programme up to 30-45% of species ITQS in the New Zealand quota management system. Setting quota concentration limits can help fisheries management achieve specific social goals. However, limit should be determined on a fishery by fishery basis, as some fisheries such as the offshore pelagic sector which requires significant capital investment may be more likely to have high level of concentration in comparison with near shore fisheries accessed by smaller boats. This mechanism would be aided greatly by the recent publications of the UK FQA Register of quota holders and their holdings.

**Table 3. Quota Concentration Limits in International Fisheries**

Fishery	Quota Holding Limitations
Alaskan Halibut and Sablefish Fixed Gear IFQ Programme	0.5-1.5% of the halibut or sablefish shares- this varies depending upon the area and excludes vessel with grandfathered rights.
British Columbia Integrated Groundfish Programme	4-10% of a species' yearly catch limit, with the percentage varying between species
Gulf of Mexico Red Snapper IFQ Programme	6.02% of total IFQ shares
New Zealand Quota Management System	Between 30-45% of total species ITQs

**4.5.3 FQAs can only be sold as segments:** The Government can put in place restrictions on how FQAs are sold. In particular, if an FQA were to be split into a number of equally sized segments, with no individual or grouping able to buy more than one or two segments, then the price of FQA segments may become more affordable to aspiring new entrants. A similar system operates in the US Pacific halibut fishery. The key beneficiaries of this option would be those individuals and firms who currently wish to hold FQA units or to increase their holdings of FQA units but are unable to do so due to the prohibitive costs of buying whole FQA units or bundles of whole FQA units. Demand for FQA segments may come from current skippers or owners, crew members, new entrants and aspirant new entrants.

The overall impact of this option is uncertain. It would affect a somewhat arbitrary redistribution of FQA holdings compared to the do nothing option – from larger to smaller operators in the first instance - and may in some circumstances increase economic efficiency and in others may reduce it. Likewise the expansion of the market and the attendant reduction in the market power of large buyers may increase prices, to the benefit

of sellers. Alternatively, there may be downward pressure on prices because the new demand comes from financially constrained smaller operators – sellers may be forced to cut prices in order to find willing buyers.

## 5. Identifying Regional and Sectoral Differences

### 5.1 Labour Supply: Is reliance on a migrant labour force a problem or a fact?

There is a strong perception that the Scottish fishing industry is becoming increasingly reliant on a migrant labour force. While this was supported in the industry engagements, it appears to be a very distinct perspective of the POs and associations located in the North-East of Scotland and within the primary ports of Peterhead and Fraserburgh. It is important to note that this narrative is not representative of the industry across Scotland. Industry representatives on the West Coast and the island communities including the Shetlands report relatively high levels of enthusiasm amongst young, indigenous workers towards the industry. This divergence is likely to be caused by the relative opportunities offered to the various local workforces. On the East Coast, the fishing industry faces strong competition from other sectors such as oil and gas, which offer better opportunities in terms of wage and working patterns.

On the East Coast in particular, the growing migrant workforce appears to act as a mechanism that provides the industry with an adequate supply of labour which the domestic market can no longer provide. As well as a lack of demand amongst young, Scottish workers to enter the fishing industry, some employers prefer and benefit from a migrant workforce due to their generally lower expectations about wages and employment conditions. Employers in some sectors such as agriculture openly acknowledge that the wages and employment conditions they offer for low-skilled work are considered unacceptable to most British workers (Aldin et al., 2010).

**Table 5. Top 10 Sectors in the UK of Foreign-born Workers, 2012**

Sector	Migrant workforce as % of total sector workforce
Manufacture of wearing apparel	41.5
Manufacture of food products	32.9
Domestic personnel	28.2
<b>Marine Fishing</b>	<b>27.3</b>
Food and beverage service activities	24.7
Accommodation	22.0
Warehousing & support for transport	21.3
Security & investigation activities	21.1
Computer programming and consultancy	20.8
Air transport	19.6
Residential care activities	19.2

Source: Labour Force Survey 2012

As well as the beneficial impacts and auxiliary nature of a growing migrant labour supply for the Scottish fishing industry, analysis of the wider UK workforce suggests that this increased dependence is not wholly driven by endogenous factors that emanate from within the industry. Instead, this shift appears to be representative of wider changes taking place within the UK labour market. In the UK, the number of foreign-born workers as a share of UK employment increased from 7.2% in 1993 to 13.6% in 2012. However, the impact of this across different occupations and sectors has not been uniform as migrant workers have tended to work in concentrated numbers in a few industries. As indicated by Table 5, there are a number of industries that have a growing reliance upon a migrant labour force. Two key examples are the construction and social care sector. Due to the absence of a

comprehensive vocational education and training system and low levels of labour market regulation, the construction sector experiences difficulty in finding suitably skilled British workers (Chan, Clarke and Dainty, 2010). In a similar vein, public policies and the low wages and poor working conditions of social-care workers and care assistants has created an increasing demand on migrant workers for this sector (Moriarty 2010; Cangiano et al. 2009). However, while a growing migrant labour force may be part of wider changes taking place at an aggregate level - as domestic workers take up better opportunities in other sectors - political discomfort may arise given the aspiration for an industry structure based upon family-ownership. In essence, if there are fewer young Scottish workers entering the industry as crewmen, this will limit the number of Scottish workers aspiring and becoming Scottish skippers. As mentioned, this appears to be a situation predominantly affecting the industry in the north-east. The basic point is that research suggests that the reason why some sectors have a disproportionate need for migrant labour is due to a lack of interest and skills from within the domestic labour market. Therefore, while the Government can assist those domestic workers who still wish to enter the industry through training schemes and ownership grants, unless the conditions surrounding the work and pay are improved, demand for this service will continue to fall. The most practical remedy to this is therefore to increase the attractiveness of the industry to domestic workers by improving the economic performance and competitiveness of the industry.

## **5.2 Facilitating New Ownership**

From reviewing the industry and community-led new entrant's schemes in place, there appears to be a number of routes and programmes that facilitate new ownership into the industry. However, these are overwhelmingly located on the West Coast (Outer Hebrides, Barra, Islay) and in Shetland, with ownership schemes promoted by processors again concentrated on the west coast and focused upon the inshore and shellfish sectors. There is an evident gap on similar opportunities on the North-East, which one PO reported was due to a lack of demand for such services as there are reportedly no young people in this region who wish to enter the industry for reasons mentioned above. While the establishment of new ownership does not seem to be an issue on the west coast and in the islands and for the inshore and shellfish sectors, it is evident that different conditions operate in the North-East and specifically for the demersal vessels in this area. However, as commented by two POs it is likely that outright ownership cannot be facilitated amongst new young workers in this sector. Instead, they believe that the best case scenario is for young Scottish workers to be enticed into entering the industry as crew, and then to work their way up to become skippers, without actually owning the vessel or quota. Put forward by representatives in this area was for training and recruitment to become more dynamic and again for the competitiveness of the industry to improve.

While in the industry interviews the concept of quota redistribution found no support, it was proposed by a representative of a fishing association on the west coast that a potential policy was for new licences to be created and managed so as to encourage new entry. As the government has the ability to increase the number of licences, every year a few could be granted to new young fishers and once the operator has established themselves and was able to purchase and source their own, the licence would be rescinded and ring fenced to be used again. The issue is that all vessels within this sector do not support such as policy, as some existing operators are not happy to give new starts a 'hand-out' in this manner.

**Table 6: Overview of the Key Programmes Facilitating New Entry**

<b>Programme</b>	<b>Type of Entry</b>	<b>Areas covered</b>	<b>Sectors covered</b>
Community Quota Holdings	Ownership	West Coast, Shetlands	Demersal, prawn trawlers
Community Quota Holdings Processor Schemes: MacDuffs, Atlantic	Recruitment Ownership	Shetlands West Coast (Outer Hebrides, Islay and Barra)	Demersal Shellfish, Inshore
Community-Local Bank Finance Schemes	Ownership	West Coast	Inshore, shellfish and demersal
Modern Marine Apprenticeship (MMA)	Recruitment	Areas with good college framework (East coast and centre)	All
Scottish Government funding of FITA 3-week course	Recruitment	West Coast- areas without good college framework	All
Princes Trust, EFF Axis 1 grants	Ownership	All	All- highest impact on small-scale and inshore
EFF Axis 1 First Time Vessel Owner/Shareholder Funding	Recruitment/ Ownership	All	All

## 6. Conclusions

There is a presumption in government (e.g. HM Treasury Green Book, Scottish Government Economic Strategy ) that the market mechanism should be left to function freely unless there is some identified market failure or distributional objective to which government intervention can be effectively applied (ref-document). This report has highlighted that barriers do exist that make it hard for new, young fishermen to enter the industry. However, from the current evidence it can be concluded that public intervention beyond the status quo of providing information and training is not justified at this time. The barriers that may prohibit entry into the Scottish fishing industry are structural rather than strategic and do not represent instances of market failure.

Moreover groups of private individuals (most often POs, fishermen's associations, the wider industry and local authorities) are already working in a productive capacity to correct and mitigate some of the barriers to new entry, therefore government intervention is believed to be unwarranted. This is witnessed in the Shetland PO, the Orkney PO and the SFO's arrangements that ring-fence quota for new entrants. The different partnerships in the Western Isles - between the industry, local Council and local banks and the processing industry and local communities - illustrates that there exist several models that can be taken on by the industry and communities to support and develop the business plans of young fishermen and contribute towards initial capital start-up costs. While there is a distinct lack of concurrent programmes in the North-East of Scotland, this is reportedly due to a lack of demand for such services amongst the domestic labour force on account of the relatively uncompetitive working conditions offered by the industry. In relation to potential policies that presuppose additional government involvement in facilitating new entry such as the administered redistribution of quota, it is evident that the feasibility and acceptability of these mechanisms are undermined by issues of inefficiency, equity and unintended consequences (such as an increase in the market price of quota). Moreover, a strong theme coming out of the industry engagements was that government intervention in terms of redistributing quota to new entrants is unwanted. It was conveyed that any mechanism of this sort should be administered by the POs along the lines of the Shetland model. Given that quota would be deducted from existing fishers, it is natural they would want maximum control over the decision-making processes involved. A key role for Government intervention in this situation appears to be in correcting some minor information failures, for instance to promote information and advice on retirement, to facilitate contact between retirees and potential entrants and a new active role could be for the collection and dissemination of information and best-practices concerning the community and industry led programmes that have facilitate new ownership. The construction and design of similar programmes around the country could be promoted and facilitate by Government engagements with local associations and communities. Representatives of all the schemes spoken to commented they would be happy to share project development and advice with interested parties.

In addition, Government policies should continue to support and promote the wider social objectives of providing access to education and training for those interested. It is the view of the industry that this should be the principle role for Government. A concern of the industry is that the future of several schemes that receive financial assistance to promote training and qualifications are in danger as government funding is coming to an end. One suggestion from the industry was an extension of government funding of the FITA 3-week training course as this is soon to expire. This course has been identified as a positive mechanism

for helping young fishers gain the necessary skills and qualifications for entering the industry. A positive policy response would be to support the continued work of programmes such as the FITA and Scalloway NAFC Marine Centre, rather than invest in start-ups schemes that carry higher risk.

In terms of what the industry wants from the government in tackling this issue, the continuation of Scottish government policies financing training, the Apprenticeship scheme and the various sources of EFF and Seafish funding are all welcome. In terms of policy change, the main theme coming from the industry is for a political commitment from the Government towards the future of the industry and for continued progress in alleviating the industry's problems. One association commented that before money is poured into the industry to encourage new entrants, the problems facing the industry should first be addressed; otherwise those entering the industry would be faced with hardship. A common theme was that to encourage enthusiasm amongst young, potential fishers exists within communities; the industry has to present itself as a more attractive package to this demographic. As discussed, a practical long-run option would be to facilitate changes in how quota is managed to make the transfer of quota more efficient and to help improve the wages and job security the industry can offer by making the industry more profitable. This would, however, require a political value judgment as it likely that these mechanisms could run counter to wider social objectives of fisheries policy.

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