



Social Impacts of Fishing
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**The Social Impacts of England's Inshore Fishing Industry:
Final Report - Appendices**

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Appendix 1: Literature Review

1.1 Introduction

A systematic literature review of the academic, policy and grey literature was undertaken relating to the social impacts of fisheries, as well as relevant policy. A variety of search methods, including online databases and other search engines, were used in order to compile a comprehensive as possible list of relevant documents. Documents identified included policy papers, journal articles, dissertations, books and grey literature.

The following section outlines fisheries policy and management systems using the existing social science literature and relates it to the social impacts of fishing. This starts with a review of how social scientists have viewed management measures and then onto the social processes underpinning some of this critical commentary. Towards the end we also include review of rural development measures related to food products as this informs a broader view of how food can be used to improve the social returns to individuals and communities. Although we report this literature it is important to note the limitations of some of it, in that frequently it is discussing communities in other nations, communities which are geographically remote in a way that nowhere in England is and also it at times struggles to account for ecological concerns. We will return to these criticisms later.

1.1 Fisheries policy literature

Comprehensive fisheries policy and management systems were only established in the last 30 to 40 years, in response to growing concerns about the depletion of commercial fish stocks through overfishing (Symes and Phillipson 2009). The stated priority was to halt the depletion of fish stocks, allow recovery and create a sustainable resource. At the same time national governments, particularly those with a tradition of sea fishing or the use of fish in national cuisines, have an interest in a successful and robust commercial fishing industry. Aligning these objectives of conservation of fish stocks and economics imperatives add a particular dynamic to

these policies. With these objectives in mind, most policy and research to date has unsurprisingly centred on biological and economic objectives. Measures that have been considered as necessary to combat overfishing and preserve a commercial fleet have come at a 'substantial social cost' (Symes and Phillipson 2009).

The European Common Fisheries Policy (CFP) was established in 1983 with the objectives of conserving threatened fish stocks and limiting fishing effort, while maintaining employment and income for fishermen. One of the fundamental issues for managing fisheries is that fisheries are a common pool resource. There has been the prevailing belief that open access common resources cannot be managed effectively as illustrated by Hardin's (1968) 'Tragedy of the Commons'. It is, thus, assumed that in order to solve this management problem, user rights of the common pool resource must be redefined either through forms of state ownership or privatised (Symes 1998). In fisheries policy, this has been achieved in the EU by fixing upper limits on the quantities of fish that may be caught per year - *Total Allowable Catch (TAC)*¹ - and associated national quotas - *Fixed Quota Allocations (FQAs)*. This is a way of limiting access to the common resource, and is coupled with *technical measures* such as net mesh sizes, closed areas, closed seasons and decommissioning of the vessels to reduce the ability of the fleet to catch fish. Each Member State is allocated a TAC annually and is responsible for distributing it within the nation. In the UK the quota is mainly allocated to Producer Organisations, which are made up of individual vessel owners (Phillipson 1999). However, under 10m vessels are excluded from the main sectoral quota systems administered by the Producer Organisations, having their own quota allocation (Phillipson 1999).

Behind this apparently simple way of organising the access to the fishing resource lie a group of competing and often contentious processes. Although an ancient way of life many fishing vessels make use of the latest technology, even small vessels can have a substantial *capacity* to catch fish. Measures of vessel length do not account for equipment, engine capacity or technological devices (for example fish finders) all

¹ Fixed maximum quantities of fish that can be caught from a specific stock over a given period of time.

of which in combination have a role in determining the capacity of a vessel to catch fish. How to manage that capacity is an area of technical and political debate ranging from restricting access through to limiting the use of technologies or combinations of these measures. The calculation of the TAC is based on sophisticated and rigorous ecological science but all science has limitations, for example areas that are not well understood, a problem that is exacerbated by the scale and problems of physical access to aquatic ecosystems. Then as with all EU processes there are political processes at play in determining allocations, and this is before individual member states determine how to implement these policies.

A further process is to allocate individuals an *Individual Tradeable Quota* (ITQ), either as a privatisation of access to the fish stock or as part of a state management policy. The quota system of ITQs is favoured by economists and has the tacit support of biologists (Symes 1998). It is argued that it gives fishermen a stake in the resource, a sense of ownership that will encourage them to have a sense of stewardship and a long-term interest in its preservation. Some social scientists and small-scale fishermen oppose it due to the potential inequities in ITQ-based management.

McCay (1995) suggests that a central issue is how a system of ITQs affects existing and socially desired distributions of property rights, power and wealth. ITQs are usually instigated when there is a need to reduce capacity and so can lead to job losses, together with changing social relations of production and changing social structures of communities as property rights are concentrated into fewer hands (McCay 1995). Arguments in favour of ITQs have also been disputed on conceptual grounds, by Symes in particular, as arising from a misinterpretation of the socio-political nature of common property resources and on moral grounds for allocating free shares in a common good (Symes 1998). Symes (2005) has suggested that quotas are 'crisis management' rather than a long-term sustainable approach. This speaks to a philosophical divide between those who believe that common goods are best managed by the communities closest to them (Ostrum 1999), those who argue that the most effective way to protect them is to make them into unlimited private property (with no restrictions) and those who argue for limited (by time and/or area) private property. Pragmatically these differences may also relate to the goals of the

governance of the fisheries, with community or local management associated with higher levels of social capital (Hall 1999), whilst others have sought economic efficiency or fish population sustainability (Wilén 2000).

There is continued debate about the effectiveness of measures adopted under the CFP as many have argued that it has yielded poor results and many fish stocks are presently outside or almost outside safe biological limits (for example EC 2001). The EC's Green Paper suggested that TACs have a limited effect as the levels set are in some cases higher than indicated in scientific advice resulting in continued overfishing (Daw and Gray 2005). As an example, in 2002 the International Council for the Exploration of the Sea (ICES) recommended a complete moratorium on all catching of cod. The Commission opted to propose an 80% reduction in cod TAC. However, the Council of Ministers agreed on a 45% reduction with effort limitations (Daw and Gray 2005). Further, the requirement not to land certain sizes and species leads to *black fish landings*² and *discarding*³ at sea (Symes 1998). A report for WWF Germany estimated that one million tonnes of fish is discarded every year in North Sea waters, accounting for a third of catches (Schacht and Bongert 2008). It is argued additionally that technical and structural measures are often stalled, with delays in implementing mesh-size regulations and closed areas rarely being implemented (Daw and Gray 2005). Fleet restructuring to reduce effort through Multi-Annual Guidance Policies (MAGPs) has also been slower and less severe than advised by scientists (Daw and Gray 2005). The landing of *black fish* and *discarding* have important consequences for the business activities of fishermen and their relationship with policy, as discussed below in relation to stigmatization.

Crean and Symes (1996) argue that overlooking the needs of fishermen results in non-compliance. As they do not support the regulations then illegal activities and infringements are common. The fishermen also question the science on which the policy is based and the management of those policies, pointing to the disparities within the EU. A study from North America echoes this; Woodrow looked at the

² Selling of illegally landed catch (either illegal species or over quota) on the black market.

³ Dumping of illegal/unwanted/over quota species or juveniles at sea that are caught as by-catch.

effectiveness of fisheries reduction programmes in Newfoundland during the Northern Cod Moratorium and concluded that they were largely ineffective at reducing the number of fishers in part due to a lack of consideration of local needs (Woodrow 1998).

The literature on inshore or small-scale coastal fisheries in England is limited, so on occasion the broader offshore industry and other parts of the UK were considered, as it is inevitably difficult to assess the social impacts of this aspect of the industry in isolation. Different terminology has been used to describe 'inshore' including: small boat, small scale, artisanal and coastal, based on a range of criteria with reference to vessel size, trip length, activity patterns, gears or species targeted (Symes 2001). In general, small-scale fisheries are viewed as being typified by their flexibility and different types of gear, with passive gear (fixed nets, lines and traps) and encircling gears (seines and lamparos) being most common (Symes 2001). A common element of the definition is that small-scale fisheries are located in inshore waters and vessels are under 10m.

While a fairly extensive policy literature exists at both the European and UK level, this is mainly couched in economic and biological terms, with generally little reference to social impacts. Where social objectives are acknowledged, these are often of a broad nature and in respect of employment, social inclusion and the economic sustainability of a community. The academic literature on the social impacts of fisheries is less widespread. What little literature exists is dispersed and fragmented, with research findings published in diffuse publications. A number of texts were published in the late 1990s and early 2000s in response to the growing 'fisheries crisis', most notably *Fisheries Management in Crisis* (Crean and Symes 1996), *Property Rights and Regulatory Systems in Fisheries* (Symes 1998), *Alternative Management Systems for Fisheries* (Symes 1999), *Fisheries Dependent Regions* (Symes 2000) and *Inshore Fisheries Management* (Symes and Phillipson 2001). Also of note is a book published in 1993 by Svein Jentoft, *Dangling Lines – The Fisheries Crisis and the Future of Coastal Communities: The Norwegian Experience*. Jentoft's

text was written after the collapse of the Barents Sea codfish stocks and he focuses on what sustainable development means for Norway's coastal fishing communities. There is little grey literature relating to the social impacts of fisheries. Of note is a partnership between WWF-UK, the National Federation of Fishermen's Organisations (NFFO) and Marks and Spencer, entitled *Invest in Fish South West*. The focus is on rebuilding and maintaining sustainable fish stocks through fisheries modelling and the involvement of a wide stakeholder community. Through engaging stakeholders in bio-economic modelling for policy option comparison, the partnership has aimed to seek agreement on preferred fisheries management options and in turn influence fisheries policy. This has had the secondary impact of fostering collective learning about the fisheries situation in the South West and has indirectly promoted a cooperative climate among key stakeholders.

Other authors critique the developing fisheries policies as in this review, such as Toddi Steelman and Richard Wallace (2001), Tim Daw and Tim Gray (2005) and David Symes (2005). There is a small amount of literature that attempts to develop social impact assessments for fisheries, although these tend to be more biological and economic than social, focusing more on fish stocks and the economic impacts on fishing businesses in terms of income and employment, rather than on the socio-cultural impacts of the industry on its host communities (Bradshaw, Wood et al. 2001; Pollnac, Abbott-Jamieson et al. 2006; McClanahan, Castilla et al. 2009). This highlights an important ontological difference that divides the literature about social impacts. Fisheries studies have been dominated by quantitative approaches that believe that behaviour can be understood and even predicted through modelling. This stems from the concept that behaviour can be seen as a system, which is often a meeting point between different bodies of knowledge such as economics and ecology (Bradshaw, Wood et al. 2001). The emphasis is placed on data points that can be counted or measured with other processes that cannot be enumerated sidelined. Many social scientists do not accept that many aspects of human behaviour can be understood solely through quantification.

1.3 Gender

A significant number of authors have addressed gender roles in fisheries families, especially during times of change and difficulty. The emphasis is often on the role of women in fishing communities, as well as the impacts of the reduction in fishing on perceptions of masculinity. The main authors in this regard are Jane Nadel-Klein, who has investigated the impacts of the North Atlantic fisheries on the role of women in fishing communities in Scotland; Munro who explored the concept of 'self' and 'community' in the context of work and family life in a North-East Scotland fishing village; Dona Davis, who has conducted studies of gendered cultures in Newfoundland; Ian Binkley, who has researched the changing role of women in fisheries communities in Nova Scotia; and Joan Marshall, who conducted a longitudinal study over 5 years observing changing gender relations in small fishing communities on Grand Manan Island in New Brunswick. A recently completed PhD thesis by Ruth Williams explored the impacts of a changing fishing industry on identity in fisher households in North East Scotland. We discuss the role of gendered images of fishing below, but it is also important to note at this stage that the locus of gender discussion has been around women.

1.4 Social goals in policy

In a recent paper by David Symes and Jeremy Phillipson, the authors argue that EU fisheries policy has increasingly become focused on goals of economic growth and ecological sustainability, with current social issues considered a lower priority. They claim that the incompatibility between economic and social objectives and the focus on 'inter-generational' justice rather than 'intra-generational equity' has led to the social dimension in fisheries policy being downgraded and diluted (Symes and Phillipson 2009). They state:

Rather than serving as an active influence in shaping fisheries policy, social issues are seen rather more as the irritating consequences of policy. At best they are considered late in the policy process and usually dealt with in an ad hoc manner (Symes and Phillipson 2009:3).

This, the authors claim, means that there are few yardsticks by which policy makers can measure the social relevance of proposed new regulations. In 1999 the European Commission commissioned a Europe-wide project to collate and examine data on socio-economic factors of dependency on fishing (SAC 1999), but the focus was narrowly defined to economic and employment data. Indeed, in the Commission's Green Paper on the CFP, social issues are considered only in terms of employment and safety at sea. Symes and Phillipson, therefore, assert that explicit and transparent social objectives need to be included early in the policy process. They argue that only broad social objectives are left such as the creation of strong communities, fair incomes for fishing businesses and fairness towards consumers. The reason for the lack of specific measures derives from a series of factors:

Allied to the scarcity of relevant social data on the fishing industry is a lack of awareness among fisheries administrators of the social ethos, context and relationships of the fishing industry and of the fishing community (Symes and Phillipson 2009:4). .

The same lack of focus on social objectives appears in UK policy also. While the Prime Minister's Strategy Group Report, *Net Benefits*, and its supplementary analytical paper *Fishing Communities and Regional Development*, published in 2004 recommended explicit social goals in fisheries policy aimed at assisting dependent and vulnerable communities, the joint UK governments' response, *Securing the Benefits*, published in 2005 offered only a vague consideration of social objectives. *Net Benefits* acknowledged the contribution that active fishing communities make to the local social fabric, culture and the image of an area and its use for marketing (Cabinet Office 2004). In England, the social objectives, outlined in *Sharing the Benefits*, focus on tackling social exclusion and promoting long-term prosperity in fishing-dependent communities (Defra 2005). The more recent long-term vision for sustainable fisheries, *Fisheries 2027*, published in 2007 by Defra, while highlighting the social benefits of achieving sustainable fisheries, also recognised that some social benefits might be lost from traditional fishing communities as access to most of the fisheries would be by the most economically efficient operators (Defra 2007). For example, some small boat owners, under the ITQ scheme, have sold their quota entitlements to larger vessels (Pettersen 1996). Indeed, in their analysis of four UK

fishing ports, Brookfield et al (2005) found that only 10% of the catch landed at North Shields can be attributable to the local fleet.

Van Vliet (2000) argues that modernisation can often lead to the decline and disintegration of traditional fishing communities as rationalisation of the fleet and regulated access through licensing and quotas favours the large-scale sector. Symes (2000) agrees that EU policy has been responsible for many of the problems in fisheries communities, favouring large-scale, more economic enterprises. In 2001 Symes went as far as saying that EU regulators had virtually written off the inshore sector (Symes 2001) and there were concerns among fishermen that their interests were not adequately represented in the fisheries policies in Britain. The sustainability of such policy can be questioned when discarding is seven times greater (Kelleher 2005) and oil consumption is eight times greater (Tyedmers, Watson et al. 2005) for large-scale boats than for small-scale boats.

Considering fishing in isolation may also neglect other factors putting pressure on fish populations, as climate change, aquaculture, recreational fishing, pollution and waste disposal, boating and other recreational activities, renewable energy installations and tourism also impact ecosystem structure and health.

1.5 The Social Impacts of Fishing

As outlined in the previous section, the main focus of the CFP is to promote the recovery to sustainable levels of fish stocks by limiting fishing effort. While the policy also aims to secure an income for fishers and a regular supply of fish at reasonable prices for consumers and processors, social issues that may arise from it are, according to Crean (1998), viewed as secondary. Crean (1998) argues that a lack of consideration of the social impacts is counter-productive:

the very success of attaining biological objectives will be threatened by the likely disenfranchised user groups who, in some instances, may feel obliged to act independently (and illegally) to safeguard their livelihoods and current income base (Crean 1998:38).

Jentoft (1999) agrees: “before we can even hope to rebuild stocks, we must start to rebuild communities” (p. 29). Symes and Phillipson (2009) argue that the sustainability of these fishing communities is closely linked to the future of the inshore fishing industry. As with other small remote rural settlements, they are suffering the loss of basic services, including schools, medical facilities and shops. Increased property prices and lack of employment are making it difficult for young people to stay in the community. The tighter regulations and increased costs to enter the fishing industry are also a strong disincentive for young people to pursue this career path (Symes and Phillipson 2009). Whereas communities were bound by a common interest and reliance upon the fishing industry, access to diverse occupational opportunities (for example, factories and oil rigs) is eroding the ties leading to a reduction in social capital and shared knowledge. Symes and Phillipson argue that:

fisheries dependent communities become vulnerable when their social cohesion is undermined and their cultural identity challenged – and when direction, leadership, organisation and sense of self-determination are missing (Symes and Phillipson 2009:4).

For many fishing communities fishing is more than a way of earning a living (Nuttall 2000; Jacob, Farmer et al. 2001; Brookfield, Gray et al. 2005). It defines their identity as individuals, households and communities. Indeed, the change in the industry “...poses a threat not just to the livelihood of each individual fisher and fisher household, but to the collective way of life and self-regard of an entire [region]” (Nadel-Klein 2000, p. 366). We know surprisingly little about the forms of social organisation and the processes of social representation of inshore fishing in the late twentieth century. Most of evidence is fragmentary and consists mainly of anthropological studies of pre-industrial forms of fishing on the Atlantic fringe (Symes and Frangoudes 2001) see Just et al discussed below for contrasting evidence.

Symes and Frangoudes (2001) suggest that it is often tempting to compare modern-day fishing communities in the UK with pre-industrial communities or to small-scale farming in Europe. They state that while small-scale farming and inshore fishing

have certain similarities in that they are characterised by family enterprises, high levels of risk and uncertainty, seasonal impacts and often pluriactive economies, there are significant differences in the resource base and social regulation. The nature of property rights is cited as a primary distinction, with farming consisting of private ownership of an area of land that is inherited or sold on the market. Property rights within fishing are less defined with fisheries as a common resource, which is allocated through quotas, or licensing, and often managed through closed areas and/or technical measures. Furthermore, in fishing there is a clear distinction between home and workplace and often the creation of “separate worlds” for the fisherman and his family (Symes and Frangoudes 2001). Thus, while comparisons between small-scale farming (which has been extensively researched) and inshore fishing can be useful, the unique status of fishing must be borne in mind and research strategies developed that take this into account.

1.6 Dependency

Defining fisheries-dependent regions is difficult. There are no Europe-wide data sets and national data sets look at employment in a non-standardised form (Symes 2000). Data sets at the macro level are likely to conceal local dependence as fishing is often embedded in a pluriactive economy (Symes 2000). Such analyses will highlight small, remote, sparsely populated fisheries communities (with little alternative employment opportunities) and ignore important concentrations of fishing activity in more populated urban settings (Symes 2000). Symes (2000) argues that dependency on fisheries is often influenced by peripherality in geographic location. These less urbanised, rural fisheries dependent regions have characteristics such as a narrow-based employment structure based on fishing, supplemented by agriculture and tourism, high levels of self-employment in small-scale family enterprises, seasonal variations, seasonal unemployment and weak economic, social and institutional structures. The more strongly a region is characterised by these features the greater the economic and social impacts of a reduction in fishing activity (Symes 2000).

Net Benefits suggests that 'dependency' and 'vulnerability' are not the same. The report states that vulnerability increases as economic diversity and opportunities for alternative economic activity are limited (Cabinet Office 2004). The communities most likely to be negatively affected by changes in the industry are small, remote communities, which are highly dependent on fishing as there are few other employment alternatives (Phillipson 2000). Also, medium dependency communities with ports may not be well equipped to develop as fishing centres as the sector contracts. It is likely that high dependency communities that have larger ports will suffer less as they will be able to attract vessels as the sector contracts and activity becomes concentrated on well placed ports.

Fisheries-dependency has largely been cast in economic terms, with a focus on employment levels and GDP of the community (Brookfield, Gray et al. 2005) and in terms of community impacts a central focus has been on the viability of fleets. With respect to small scale artisanal fishing, Just, Bowman and Ota's (2005) research showed fishing on the north east Kent coast to be a viable small scale industry with the potential to provide a living for those successfully engaged in it, largely due to the fishermen's ability to target non-endangered species and access to overseas markets. Unlike many of the studies in remote rural areas they studied an area with a diverse economy where the wider community was not dependent on fishing, only those involved in fishing. There were few family based fishing boats but fishermen who had chosen to enter fishing, and their study makes clear the part-time and casual labour that allows many boats to operate. Foreign markets, in this case French, were very important to the fishermen's sales and business survival. Although the proximity of France to the Kent coast also suggests that within the EU 'foreign' markets may at times be more local than some national ones.

Mark Nuttall (2000, p. 108-109), on the other hand, refers to dependency in terms of social and cultural value. In this sense, fishing is a "way of life", whereby community bonds, values, knowledge, language and traditions are established, confirmed and passed on (van Ginkel 2001; Brookfield, Gray et al. 2005). Fishing provides social capital and as Brookfield et al (2005) claim, "for fisheries-dependent communities,

fishing is the glue that holds the community together.” Jacob et al (2001) concur, suggesting that fisheries-dependence relates to the “character of the community ... there is a dependence of an industry to support the sense of community and the history of that community” (p. 17-18). According to van Ginkel (2001), this is why fishers continue fishing even when it is no longer economic to do so: “their relation to fishing is expressive and existential ... Therefore, fishers often persist in working in a failed fishery” (p. 189). This explanation of the social and cultural importance of fishing is developed further below, but it is important to note that the fishermen are responding to non-economic cues and in a way that is not necessarily in line with economic rationalities.

1.7 Social Capital

Bonding social capital constitutes a kind of sociological superglue, whereas bridging social capital provides a sociological WD-40 (Putnam 2000:23)

The literature suggests that family and community provide the essential keys to the social organisation of inshore fishing (Symes and Frangoudes 2001). The community is built on kinship ties and interactions with close neighbours which are important for generating enduring egalitarian and reciprocal economic and social relationships (Symes and Frangoudes 2001). Skippers often select crew based on *agnatic* (kin by birth) and *affinal* (kin by marriage) kinship ties in a fairly closed occupational community. The mobility of labour and capital is weakening the links between the fishing fleet, the homeport and local fishing grounds, diluting the sense of ‘local dependence’. Kinship networks are being replaced with more formal contractual relations (Symes 2000). Just et al (2005) found that kinship ties in North Kent were broadly unimportant with fishermen entering fishing through their enthusiasm for it rather than family ties and being informally brought into the network of fishermen. This suggests that geography and the specifics of place may be important; for example, that fisheries located in areas with a highly developed economy may be different to remote and rural ones.

Brookfield et al (2005) distinguishes between fishing-dependent communities with a 'real' fishing industry and those with a 'virtual' fishing industry. 'Real' dependency is product-based, reflected in communities such as Shetland, where fishing and its associated industries are important for direct employment. 'Virtual' dependency, on the other hand, is image-based and presents the idea of a fishing industry in a community. It serves as a branding mechanism for marketing tourism and niche markets for fish products. The authors observed that often the economic value of 'virtual' dependency might exceed that of 'real' dependency. Some argue that exploiting this touristic value of fishing destroys the identity of fishing communities. Jentoft (1993, p. 93) claims that:

many feel that it would ruin the special characteristics; that the authenticity would be lost. It has even been claimed that the tourism industry would reduce the coastal culture to a caricature of itself. There is a danger of devaluation through commercialisation.

While both are dependent on fishing, those with a 'virtual' fishing industry depend on fishing as a cultural icon.

1.8 Employment

Maintaining security of employment and the right to fish is of paramount importance to fishermen and their families (Symes and Phillipson 2009). The fishing industry is comprised of a broad range of industries associated with fishing, not just the catching sector, leading to widely differing estimates of its economic impacts. The Scottish Agricultural College (SAC 1999) estimated that the number of jobs directly dependent on fishing is three times the number employed in catching alone. Employment has fallen steadily over the past few decades, due to modernisation and economies of scale, and alternative employment options, together with policies to reduce fishing capacity.

Hansen and Højrup (2001) identified a number of macro-economic trends that are influencing the profitability of inshore fisheries:

- Globalisation of the food industry and pressure to reduce quayside prices due to increasing fish imports and competition from other foods.

- Shifts in costs of labour and capital – new technologies, grant aid, low-interest loan schemes. Capital costs are decreasing and labour costs are increasing, so more efficient to substitute capital for labour.
- Competition from recreational fishing (selling to shops and restaurants) and aquaculture.
- Environmental costs – introduction of Marine Protection Areas (MPAs) and banning of some gears.
- Privatisation of fishing rights – ITQs and licence fees.

There is evidence to suggest that inshore fisheries have a strong influence on the social values of local coastal communities, especially in terms of employment (Symes and Phillipson 2009). The European Commission recognises this and has proposed the possibility of financial aid packages to safeguard the inshore sector (CEC 2001). Other non-subsidy measures may also be appropriate it has been argued, such as granting preferential access to inshore waters for vessels under a certain size, limiting the transferability of fishing rights of local inshore vessels and relaxing some of the licensing regulations and quota restrictions (Symes and Phillipson 2009).

The cod crisis in Newfoundland in the 1980s cost 40,000 jobs (Harris 1998). Such changes in employment structure have impacts on a range of socio-demographic indicators such as migration, education, dependency and population age structures (Symes 2000; Hamilton 2007). The out-migration of young adults and women reduces the options for communities left behind. The population contracts, becomes older and more male (Hamilton and Otterstad 1998; Hamilton, Colocousis et al. 2004). There is a reduction in human-capital as more educated individuals leave, followed by those seeking an education and a decline in the capacities of the resident population (Hamilton 2007).

1.9 Identity and Place

Fishing is a way of life and fisherfolk are proud of their identity as fishers. Fishing provides a source of community and identity (van Ginkel 2001). Fishing is important

in the social fabric of communities – social events such as parties, weddings and funerals reaffirm the identity of the fishing community. As with other groups that combine occupation, residential and familial identity, the occupational identity becomes an important source of the common bond.

Outside of the specific studies of fishing there is an extensive literature on the role of place in identity, such as Cresswell (2004), Holloway and Hubbard (2001) and Massey and Jess (1995). Understanding the links between identity and communities is bound up with the nature of social and economic relationships, especially during periods of radical change (Marshall 2001). The identity of a community can be used strategically during times of change (Williams 2008). Members of the community have something in common, in this instance fishing, and this sets them apart as different from others. The past often plays a very important role in the construction of collective identities as it can help make sense of and confront future challenges (Dalby and Mackenzie 1997).

Fisherfolk have historically had a stigmatized occupational identity that has isolated them socially (Coull 1972; Nadel-Klein 2000). Smith (1977) referred to fishers as “a denigrated, if not despised, segment” of society (p. 8). More recently, fishers, as well as farmers, are often viewed by the media and policymakers as ‘criminals’ in the environmental crisis (Jedrej and Nuttall 1996; Nuttall 2000, p. 112). They feel under attack and this sense of alienation has resulted in strong ties within the community and a strong sense of identity, not unlike mining communities, in what Gerald Suttles (1972) has termed the ‘defended community’. This perception of stigmatisation, or being marginalised has important consequences for solidarity within the group and also raises questions of compliance with regulations.

In her doctoral thesis Ruth Williams explored the changing constructions of identity in North-east Scotland fishing communities at a time of industry restructuring (Williams 2008). Williams conducted life history interviews in 19 fishing households. She looked at identity in terms of three domains of fishing: the sea, households and community. Most of the skippers came from fishing families and had always wanted

to fish. Fishing enterprises are generally passed on from father to son and the crew often consists of male members of the family or friends. In close-knit fishing communities, the social activity is concentrated around the harbour and boat sheds, and in the kitchens of family and friends (Williams 2008). The presence of fishing is at the centre of social structures and occasions. Many villages depend on fisheries for their cultural identity even when it is not the main source of income. The reduction of fishing can change the status of the fishing community and socialising of the next fishing generation is lost.

1.10 Heritage and Culture

In fishing communities the construction of gender roles has traditional roots and relevance. Men and women have particular responsibilities and roles with men's domain being the sea and a woman's the household. There is a strong sense of masculinity and occupational identity associated with fishing and the sea (Davis 2000). Fishing is a very hard and dangerous job, with a UK commercial fishing vessel lost at sea on average every 12.5 days over the past 10 years (Cabinet Office 2004). Fishermen need particular skills in fishing techniques, using technology (such as electronic fish finders), reading the weather and understanding markets. In Ruth Williams' study in North-east Scotland she found that within a community, the skill, honesty and self-reliance of fishermen is recognised and highly prized (2008). Fishing is an identity created by doing and men experience a loss of identity and self-esteem when they can no longer fish. For those that are forced to leave fishing as an occupation they feel excluded from the social networks of fishing work. The fishermen see policy changes as undermining the autonomy and flexibility of skippers (Williams 2008).

In terms of fisher households, women are central. Fishwives are highly independent and multi-skilled. In her longitudinal study of coastal fishing communities in Newfoundland, Dona Davis (1988; 2000) proposed two categories of women's work in fishing communities, which she termed 'instrumental' and 'expressive'. Instrumental work involves their tangible contribution to the industry – preparing

the boats and nets for sea, providing supplies for the crew, acting as ground crew, maintaining communication between skippers and with families of crew, and processing the catch onshore. Since fishing has become more industrialised women are less involved in processing, but they are still involved in ensuring the equipment and stores are ready and maintaining communication. Their work is often unpaid (Jentoft 1993; Gerrard 2005).

Expressive work is more symbolic and emotional. It is associated with maintaining social networks, caring for children and raising the next generation of fishers and worrying about the fisherman's welfare. In Davis's account the late 1970s, when the fishery was at its peak, the major forms of social organisation were centred on households that were matricentric and involved extensive kinship networks. Since 1987 local catches from small inshore boats have been in decline and halted in the spring of 1989. By 1990 the community was facing high unemployment and many individuals were on state welfare (Davis 2000).

The restructuring of the fishing industry is challenging these traditional gender roles. Davis (2000) and Power (2005) investigated the changing gender roles in small fishing communities in Newfoundland. They found that men's masculinity was being compromised as they spent less time at sea and more time on shore, in the home, or at the bar. With men at home more, this encroaches on the women's domain as "shore captains" and there is a re-negotiation of roles and independence. There are some parallels between the changing family structures of fishing communities and small family farms and mining households (Ni Laoire 2001; Bennett 2004).

Economic necessity means that more women are seeking paid work in order to support the family income, intensifying men's loss of self-esteem. Similarly, the pressure on small family farms often forces the woman to work outside of the farm to subsidise the household (Shortall 2002). This off-farm work allows the household to maintain its farming identity but continues to render the woman's contribution as invisible and there is generally no re-negotiation of domestic responsibilities (Shortall 2002).

1.11 New Representations

Representations of fishing in tourism and heritage are becoming more commonplace (Nadel-Klein 2003). Some small east coast Scottish communities depend on tourism and touristic representations of the fisher past as much, or more so, than fishing itself (Nadel-Klein 2000). The 'fishwife' image is often used as an icon for representing and marketing fishing communities. 'Fisher lassies' are emblems of cultural survival. They are often romanticised in paintings and novels, with images of young, beautiful fisher lassies with their long hair blowing in the wind. Women have, thus, taken on a new iconic significance in sustaining a sense of communal pride for the "tourist gaze" (Urry 1990; Nadel-Klein 2000). While some argue that the focus on fishing heritage is a commodification of the culture of these communities, the heritage in tourism can also reflect local people's perceptions of themselves (Nadel-Klein 2000). In her study of three villages on the east coast of Scotland, Jane Nadel-Klein found that households that did not fish themselves, but were descended from fisherfolk, claimed a strong attachment to this identity.

Tourism and in-migration means fishing communities are forced to contend with 'outsiders' for the power to define how they are interpreted and represented (Nadel-Klein 2000). Their social and spatial boundaries as fishing communities have become blurred (Symes 2000; Symes and Frangoudes 2001). For communities historically isolated and stigmatized, this presents new challenges. Thus, the images of 'fisher lassies' and 'fishwives' are not just for the tourists. They are emblems of fishing communities' heritage and knowledge and still forge identity and culture (Nadel-Klein 2000). Fisherfolk have used their social stigma to express and cherish their identity and through these images they are able to keep hold of their sense of community and way of life (van Ginkel 2001). In other words they have used their historical portrayal to help preserve their own identity as members of a traditional industry.

1.12 Gaps in research/literature

Most fisheries research has tended to be biological rather than social, and what social science research there is tends to be economic (Bradshaw, Wood et al. 2001). This is perhaps not surprising given the policy emphasis on bio-economic data. This has resulted in a lack of understanding of the socio-cultural impacts of fishing reforms (Symes 2000; Williams 2008) and a lack of influence over policy (ESSFiN 1999). Thus, research that investigates the social impacts of fisheries is required, in order to include explicit social objectives in future fisheries policy and management.

1.14 Integrated Rural Development

With regard to the actual and potential onshore impact of inshore fishing, there is a considerable relevant literature around the concepts and practice of 'integrated rural development' and 'community development.' Some of this literature is appraised in Moseley (2003); see also Carnegie UK Trust (2007), Nemes (2005) and OECD (2006). The thesis is that sustainable rural development – and inshore fishing ports may be seen as essentially 'rural' albeit 'coastal' communities - should have a territorial rather than a sectoral focus with the various threads of investment and policy being woven together at the level of individual localities. This is based on the observation that small communities, and rural communities especially, have a limited amount of resources to draw on. The best route for community development is to assess what 'assets' – using the term very widely - are available and explore how they can be combined to maximise returns to the community. Thus the various advocates of integrated rural development argue that all of the following need 'integrating' at the local level:

- Objectives - social, economic and environmental
- Agencies and actors, be they local, regional or national; state, commercial and 'third sector'
- Individual programmes and resources
- Top-down and bottom-up perspectives.

Therefore communities will look to develop the town or village as a whole looking to programmes that cut across different activities rather than develop one sector within the locality.

In parallel to this the role of food has become a central hub of many rural development processes. This is because the most available 'assets' of many rural communities are food products, often in bulk form and being sold initially as an undifferentiated commodity. The process of concentration, of a small number of efficient and large scale operators providing the bulk of the product, with the majority of smaller businesses providing the bulk of employment is not unique to fishing but is apparent in agriculture and has left large areas increasingly economically marginalised. Taking an asset based approach to food products has led communities to seeking ways of adding value to products through a number of routes, either separately or in combination. The first has been to link the product to a particular area, to create a provenance based on a locality and its qualities, often backed by EU designations (i.e. PDO, PGI). The second may be to associate the product with a third party certification that confirms that it adheres to environmental and/or social prescriptions (i.e. organic or fair trade). This may be connected to a degree of processing – smoking, wine making, cheese making - which either conforms to the certification or the provenance. In turn this may allow the product to become part of a broader offer linking the product from production to processing and onto consumption through the hospitality trade, to local people or more lucratively tourists.

This valorisation can be seen in economic terms, of using food products to generate local economic multiplier effects but it is also a social and cultural process allowing residents take pride in their community. Festivals and community events combine promoting the process and reinforcing the community. The view is taken that community needs to be performed, to be enacted on a regular basis to build it. This can help with the feeling that an area or community is marginalised or excluded. Examples of these processes of community development through food are diverse

but range from the wine routes in northern Italy, broader designations such as Welsh Lamb or narrower ones such as Pembroke potatoes⁴.

1.15 Social Impact Analysis

Social Impact Assessment (SIA) includes the processes of analysing, monitoring and managing the social consequences of planned interventions and any social changes invoked by those interventions. The methodology of SIA can be applied to a range of planned interventions and can be undertaken on behalf of a wide range of actors. SIA can also utilise participatory processes to analyse the concerns of interested parties and involved stakeholders in the assessment of social impacts in the monitoring of the planned intervention (IAIA, 2003). Originally designed for environmental impacts the process has been broadened to include multi-factorial assessments bringing the environmental alongside the economic and the cultural. It has become a common feature of policy interventions, although the requirements can be quite varied in relation to for example the methods and requirements that are covered under SIA⁵.

The SIA approach implies that the method establishes a 'baseline' or 'community profile' from which future changes can be measured, as it is considering an intervention that is bounded to a degree in space and time (Interorganisational Committee on Principles and Guidelines for Social Impact Assessment 2003). This means that it is often possible to talk of impacts being: direct, secondary or indirect, cumulative and synergistic, because causality can be related to the project that is being assessed (CAG Consultants 2009). As such SIA has two important limitations. First, open-ended processes do not provide a baseline against which comparison can be made; and, second, the approach often relies on quantitative data, which limits the range of factors that can be considered. SIA tools are therefore at their optimum when deployed before an intervention, and in circumstances where the impacts are likely to be relatively discreet – bounded in space and time. In these

⁴ <http://www.pembroke21c.org/farmersmarket.html>

⁵ http://ec.europa.eu/governance/impact/commission_guidelines/best_pract_lib_en.htm#_10

situations causation can be clearly linked to the intervention, rather than to flows and processes that may already have been present. It is argued that SIA can have a role in monitoring the impacts of a policy intervention and those assessments should be peer-reviewed before publication. The research team have experience in forms of impact assessment and multi-criteria evaluation as set out in the methodology section

1.16 Male occupational culture.

The focus on gender in the existing literature on the social impacts of fishing has focused in general on the role of women, although the literature points to the importance of men working at sea. Several studies into *male occupational culture* in the police service, mining, firefighting and in the armed forces have emphasised the common features of a working class, masculine occupational identity that are directly relevant to the fishing industry. Thurnell-Read and Parker in their study of firefighters noted that:

ideals surrounding notions of physicality, danger, aggression and competence have often been cited as prime factors in the construction of working class, masculine occupational identity (Thurnell-Read & Parker 2008:128).

That fishing is one of, if not the most, dangerous occupation in the UK underlines the importance of the physical challenges and danger of being a fisherman. Although aggression would not appear to be directly applicable, apart from perhaps a willingness to put to sea in adverse weather, competence is of direct importance to fishermen. It is also important to note the role of 'ideals', and the aspiration to live up to these ideals, and to be seen to by others, is an important facet of this identity. Part of the job or identity of a fisherman is constructed around 'masculine' traits, not least the physical rigors of fishing for a living:

we are reminded that the ability to meet the physical challenges of particular types of work is central to the construction of certain occupational identities. (Thurnell-Read & Parker 2008:128)

Although in part this is a bodily bravery and hardiness, determination – mental strength – is as important:

the importance of psychological (as much as physical) strength in the face of dangerous circumstance can be seen here as integral to the construction of workplace competency. (Thurnell-Read & Parker 2008:128)

The literature of occupational identity places an importance on a shared class background, which in the case of fishing may be overlaid by a shared geographical one, and a set of masculine ideals. In some instances these occupational identities reinforce one another; Thurnell-Read and Parker observed the ex-armed forces personnel in the fire service. Fishermen would appear to conform to the importance of physical strength and psychological determination, often in the face of danger and adversity. This is matched by technical competence, which may be related to equipment but also other challenges. The formation of bonds of solidarity is also important, a sense of togetherness that results in close attachments between the men involved in the occupation. Although not well developed in the literature it can also be a source of pride for those associated with these cultures, that these occupations can provide 'ideal types' for younger men, the families of those involved and the wider community.

1.17 Forms of knowledge

At the centre of many of the controversies discussed in the fishing literature are those around knowledge, between the localised and practical knowledge of fishermen and the abstract and often generalised expertise of scientists. How forms of knowledge compete, can be combined and understood has been a major topic of research in agriculture, particularly since the introduction of agri-environmental regulations in the early 1990s. Ingram (2008) in a review paper cites Lundvall and John in their analysis of being able to divide knowledge into three types: 'know how' or tacit knowledge, 'know who', the knowledge of people required to achieve tasks and the 'know why' about causality. Farmers it is generally argued have a heavy investment in 'know how':

Tacit knowledge is fundamentally linked to direct experience and the practical, sensuous and personal skill that develops with attention to a specific place (Ingram 2008:216).

This can be contrasted with 'know why' as being "the knowledge of principles, rules and ideas of science and technology" (Ingram 2008:216), a form of knowledge that is

more directly applicable to policy formation. In an occupation characterised by people sharing similar backgrounds 'know who' can often be rapidly achieved. Conflict can often appear between individuals' knowledge of a specific place and policies that are based on a more generalised 'know why'. It is possible to over emphasise these differences, as those with tacit knowledge begin to learn more of scientific concepts and those with abstract ways of knowing learn about informal knowledge systems. Broadly it remains a useful conceptualisation of different, occasionally competing, forms of knowledge.

1.13 Conclusion

The existing literature suggests that policy measures that do not include explicit social objectives from the very early stages of policy development are likely to have, at best, limited positive social effect, often with adverse consequences. In addition, fishermen are frequently unsupportive of policies that they perceive as ineffective and ungrounded in robust scientific evidence. When these policies have an adverse effect on their livelihoods and way of life they are likely to ignore them and act illegally. We would argue that the literature on the impacts of fishing is often severely limited, in part because of under-investment but also there are questions about the pertinence of its findings to the English context.

The literature is based on fisheries that are or were important to many small, rural coastal communities, either directly through fishing or indirectly as representations of identity. Fishing often provides the socio-cultural backbone to these communities and that social fabric is being eroded by the loss of the fishing way of life. The literature argues that future research needs to assess the implications of future policy scenarios on the communities and to investigate what factors make a community resilient and adaptable to change. Alongside this, participatory methods involving fishermen and fishing communities need to be undertaken to develop future fisheries policies, as it is argued that fishers often know the resource

intimately and have tacit knowledge of fish stocks and ecosystems, and are needed to contribute to the design of policy measures that are likely to be effective.

In part because there has been so little social scientific enquiry over the past twenty years, the literature reviewed above has become isolated from the mainstream of social science. Some of the literature is coloured by romanticism towards small rural communities and the 'pre-modern' forms of social life that appear to be there, while other studies put in place distinctions that are hard to sustain – the division between 'real' and 'virtual' fishing in particular, as in the work of Brookfield and Jentoft. The separation from ecological evidence in the literature tends to downplay the significance of the viable fish stocks and undervalues some forms of scientific knowledge. Geographically it is difficult to sustain, without comparative studies, direct analogies between different communities. Often the literature needs to acknowledge the importance of complexity and uncertainty, to draw forward greater light and shade in its accounts.

In other areas it develops topics that need to be further explored, in particular the importance of social and cultural identity for fishermen and fishing communities. This leads directly into considerations of masculine occupational identities and social solidarity. There is a tendency in the literature to view fishermen, their families and communities in isolation from groups with whom comparisons may be made, for example particular occupational groups, family businesses and those working in primary food production. A considerable body of work exists on the 'asset effect' highlighting that access to familial financial and social assets can have a considerable impact on the life chances of people, a key difference between most farming examples and fishing. Some of the social processes described in the literature are often more general rural community dynamics, others are common in family businesses and generally the academic literature underplays the business aspects of fishing.

To this end we have augmented this literature review with research that helps account for social impacts of fishing but has not been directly associated with fishing

until now. We have therefore considered social impact analysis, integrated rural development and the use of food products in that process, male occupational culture and knowledge systems.

Appendix 2: Methodology and analysis

The methodology employed centred on an exploratory approach involving two phases of qualitative research in six case study areas. The first phase aimed to identify and understand the social impacts of the contemporary fishing industry and the second aimed to assess the potential impacts of selected management options in the light of these findings. The package of methods selected combined a case study approach with semi-structured interviews and included a quantitative element in the first phase. In the second phase a series of discussion groups focused on a range of policy scenarios derived from the first phase of the project. The research team approached this project from the position of being able to deploy a wide range of research methods across a range of communities, business sectors and resource based industries. Each of the decisions informed the others to create a set of methods that locked into one another.

The case study approach was adopted as it has the advantage of creating a defined area of study, in this instance a geographic space of a town or village. Another route to the study could have been to follow the food chain or to examine the various bodies that comprise the fishing industry. This presented practical problems in terms of creating an accurate sampling frame to select interviewees, and also it would immediately circumscribe who was defined as having a stake in the fishing industry. A case study approach would be more open allowing people to define their stake or interest in relation to inshore fishing; it would also allow the industry to be placed within a broader societal context. The second problem is that increasingly food supply chains operate across space in a way that 'flattens' the importance of place and which again might have significant impacts on the final findings of the research by reducing the ability to consider that factor (Marsden et al 1999). Individual case studies have the disadvantage of not being easily generalisable, but multiple case studies mean that the results can be seen to be both more robust and widely applicable (Yin 1994,2003).

How to collect data in the case study areas was the next area of the methodology to be addressed. It would be possible to conduct questionnaire surveys within each area but these had a number of immediate disadvantages. Depending on the sampling strategy, many of those approached may have limited contact with fishing whilst others would be deeply involved and a questionnaire instrument would have to be very wide ranging. This level of redundancy would be wasteful of resources in relation to the quality and quantity of information returned. At the other end of the spectrum, ethnographic work as often used by anthropologists in the literature reviewed above can provide powerful insights but is often resource intensive, and may require long time periods, particularly with larger communities. Semi-structured interviews therefore suggested themselves as appropriate in that they would collect a common body of data that would allow comparison but also enough latitude for the interviewers to respond to the interviewees role and experience (Saukko 2006, Rubin & Rubin 2005).

In order to facilitate being able to make comparisons between the case studies the research team thought it would be appropriate to collect data that could be related to national indicators of social well being and community development. These questions were integrated with an interview schedule that drew on elements of previous projects conducted by the research team and reviewed extensively. The aim was to produce an interview schedule that was flexible enough to capture the particular but facilitate comparisons. As discussed below this was found to be problematic during the fieldwork and so the quantitative element was revised.

The analysis of these results was conducted by using the constant comparative approach, which requires the fieldwork team to collect data, and explore it for themes and constants in an iterative manner. The strength of this approach is that it allows the team to explore the data with the minimum of preconceptions. The team used questionnaires, recordings and field notes to create the body or corpus of data, which was then analysed systematically. The quantitative methods were used within the rounds of iteration, with the social networks being calculated separately

and then introduced to the rounds of analysis. In this way although the research was broadly qualitative in the first phase it was informed by quantitative findings.

Phase 2 which sought to gather opinion as to policy scenarios raised some of the same problems as the first phase in identifying those who might participate and the form of their role. Forecasting methods such as Delphi methods tend to work with individuals and also tend to imply a narrow range of expertise; whilst the plan for and eventual experience of phase 2 was that a wide range of expertise would be engaged in the discussion. A group discussion would have the same advantages as those held as part of phase 1 although they would need to be far more structured in order to consider the policy scenarios. The added factor was a report back of the draft initial findings from phase 1 as a confidence building exercise in preparation for the discussion. The research team has considerable experience in policy related discussion groups and so was prepared for the detailed analysis as discussed below (Lobley et al 2005, Powell et al 2008). One disadvantage of a group discussion in this form is that it is in effect a public forum and as such private opinions may not be expressed. On balance this was not considered a problem as the aim was not to create compromise or resolution but gauge likely public responses.

Phase 1 therefore comprised background data collection, development of the questionnaire tools, identification of the case studies and the Phase 1 fieldwork. During the fieldwork the team aimed to interview a range of stakeholders in the community as well as inshore fishing and convene a discussion group in the community. Phase 2 comprised identifying appropriate stakeholders, drawing up the scenarios, convening the groups and analysing the outcomes. Additional to the policy discussions at this stage we interviewed by telephone strategic tourism managers who had not taken part in the scenario discussion. The data derived from this research then formed the body of evidence that we analysed as discussed below.

2.1 Fieldwork and analysis

The fieldwork was designed to integrate with the overall methodology of the project during which two very different forms of data had to be articulated. In stage 1 the fieldwork in the case study areas required qualitative and quantitative data to be collected. In stage 2 the type of data needed to provide expressed opinions in a group setting, with a focus on policy outcomes. This was achieved through a process of 'over-lapping' field researchers with each researcher collecting data in more than one area: using quantitative findings to cross-examine qualitative ones and employing an iterative process of analysis.

2.2 Stage 1 fieldwork

Following selection of the case study areas (see section 3.1 in the main report) a profile of each case study was prepared using a standard template to include key organisations, individuals, press reports and maps of the area. This allowed the field researcher to familiarise themselves with the area(s), prepare interviews in advance and to identify other likely interviewees. On arrival at the case study community, the researcher would identify other interviewees through a process of 'snowballing' from the interviews conducted, from additional information obtained in the locality and from introductions by 'gate keepers'. After the initial period of research another team member joined the researcher to help with interviews, assist in the discussion group and discuss the emergent findings.

The limitations of the fieldwork formed a common pattern. Access to fishermen and other interviewees was often limited because of the prevailing weather, which kept fishermen at home. This was usually overcome through a 'gatekeeper' who vouched for the interviewer, suggested who was available for interview and, on occasion, organised the interview. Without such gatekeepers the fieldwork would not have been completed as quickly, although the role of the gatekeeper was always critically assessed. The importance of introductions was underlined, as where they succeeded – most notably in Amble and Rye - key local people played a role in encouraging and facilitating attendance. We also had to overcome unfamiliarity

with social science research; while some case study communities were well versed in it – Padstow and Newlyn for example - others were less so.

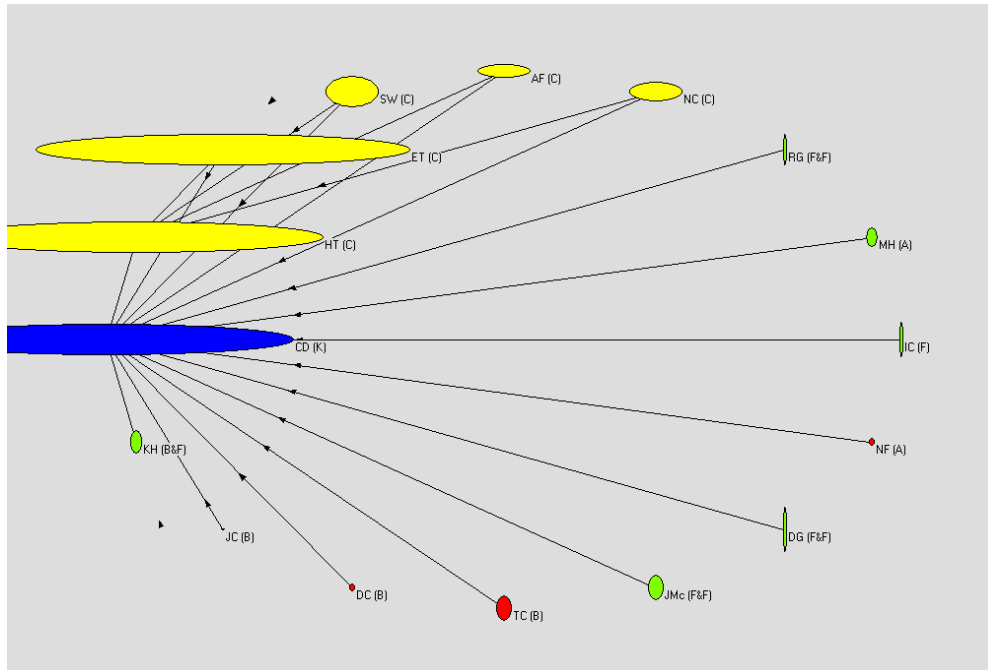
Once the individual case studies were completed these were written up using a pre-agreed framework, from which a meta-analysis was conducted using Nvivo 8 qualitative software. The results of the meta-analysis were then used to re-interrogate the source data to identify common themes and particularities of the case study areas.

2.3 Social network analysis

In two of the case study areas social network graphs were plotted. Social network questionnaires proved difficult to administer; but we had network data from Amble, Whitehaven and Whitby. These graphs were fed into the discussion of the findings, to illustrate the narrow networks that several case studies were revealing and were then used to help interpret the qualitative data.

We have graphed the networks below by adding data about how long the respondent has known the contacts in their network - the vertical axis of the nodes - and how often they are in contact with that individual - the horizontal axis. Diagram 1 shows an individual who is involved in a group of friends and associates who they have known for a long time (on average 23 years) and with whom they are in contact with regularly. This suggests someone with a number of strong ties, but who is still making new contacts – ‘KH’, ‘JC’ and ‘DC’, who are the weaker ties in this network.

Diagram 1- Ego network of regulator working in the fishing industry, with length and frequency of association added.



Key:

Blue and/or (K) = kin member

Yellow and/or (C) = colleague

Green and/or (F&F) = friend and fisherman

Green and/or (F) = friend

Red and/or (B) = business contact

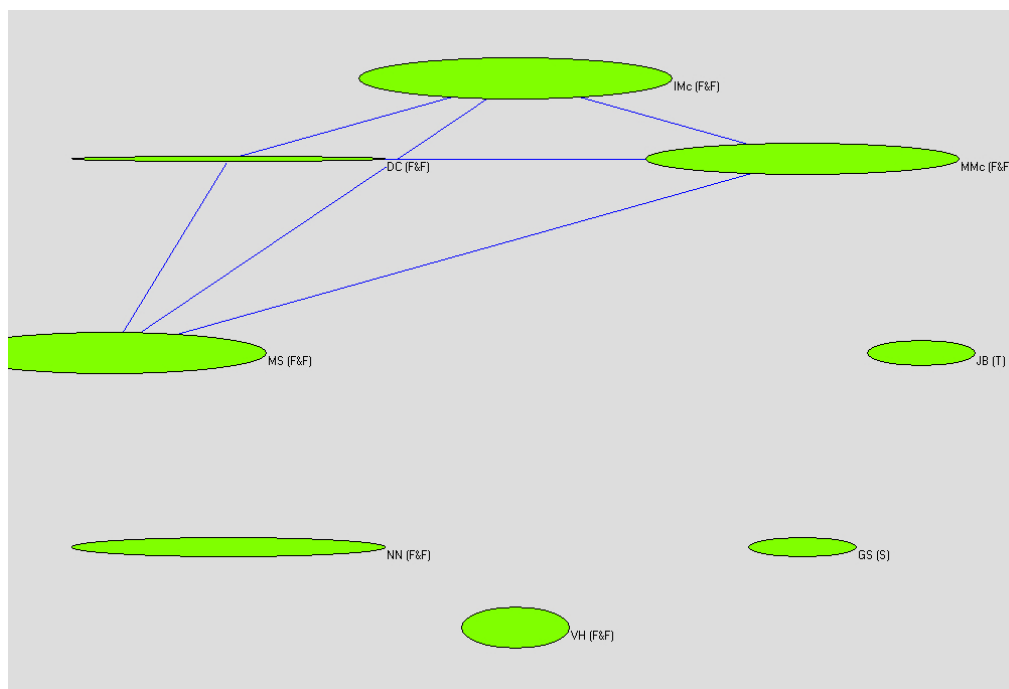
(A) = advisor

(S) = supplier

(T) = transport

The utility of these networks is in comparison. In diagram 2, using the same key as the diagram above, is that of a fisherman operating out of a cove. The average length of association is 27.5 years, everyone is described as a friend as well as having a functional role. As shown 'JB' provides transport, but is also a friend, and 'IMC' is a friend and fishermen so nominally a competitor, friendship and business are closely woven together.

Diagram 2 - Ego network of fishermen working out of a cove with length and frequency of association added.



Analytically diagram 2 reveals a close and narrow network of people who work closely together and have done for a long period of time, with the first network being more open and varied. In the first diagram we can see the 'weak ties' that we might associate with new information or ideas (Granovetter 1985). In diagram 2 what we see is a narrow 'reference group' against whom the respondent can compare themselves and gather new information, so change and innovation is less likely (Christakis & Fowler 2010).

2.5 Stage 2 data

The data collection and analysis for stage two of the project followed the same broad iterative approach but because of the short time frame and the highly structured format of the discussions the analysis was conducted from detailed notes taken during the meeting, with reference to the recordings rather than transcriptions. The notes were coded and categorised, to find the common themes as well as the issues specific to each meeting. Particular attention was given to the way in which the dynamics of group discussions – turn taking, order of speaking and claims to authority - can influence and shape the expression of opinions (Myers

2004, Munday 2006). The limitations on this stage of the research were time constraints and altering the scenarios between the groups. The first meant that the recruitment time was limited, which left some stakeholders without opportunity to participate. The second limitation meant that the groups discussed subtly different scenarios, although this was not felt to be overly problematic as the groups themselves varied considerably.

2.6 Overview of stage 1 and 2 methods

This project gathered a great deal of data very quickly that allowed for systematic and detailed analysis of the features that were general to the inshore fishing sector. The use of quantitative data allowed the discussion of the findings to draw out what was specific to each case study. The Constant Comparative method proved useful as it allowed theory to be generated without too many preconceptions by the research team. By using some structural tools – questionnaires and schedules for the group discussions - we were able to ensure that the issues were rigorously investigated. The main strength of the methodology and overall approach is that it centred on a robust sample, with a solid cross-section of respondents and provided data that was subject to rigorous analysis.

Appendix 3 – Questionnaire tools

3.1 Social Impacts of Fishing Interview Schedule

Name	
Occupation	
Date	
Location	

Purpose of the interview

This project is interested in the way in which fishing influences the rest of the community and is a project that is funded by Defra. We are looking at how fishing influences not just the economy of a community but also the social and cultural life. That could be through the various industries and groups supplying the fishing industry, through tourism or via another route. The schedule also aims to explore the role that fishers have in the community, the experience of living in this community and the impact that fishing has on that. We are visiting 6 communities throughout England so that we can compare communities.

Confidentiality

We will not reveal your identity or anything that could allow other people to identify you as an individual without your explicit permission. The locations we are visiting will be identified, so that it will be known that your experience and information came from (name of place).

Interviewer notes

The following is a list of potential cues and questions rather than a script to be followed slavishly, use your judgement as what to ask and how. What we need is the experience of living in this community and the impact of fishing on that.

Questions with NI in italics are national indicator questions; please try to ask them if possible so we can build up a picture that reflects some national trends.

If someone is proving to be helpful try to get them to complete the social network questionnaire, we ideally need 4 or 5 of these per community not everyone need complete them.

Part 1: For Fishers and their families

Do you come from a fishing family?

Has fishing changed in the last few years?

Probe for - changes in employment, catch, policy and crewing

How do (did) you make your living in fishing?

Probe for - full/part-time/seasonal/casual work and combinations of employment)

Probe for - size of your boat - is this your only boat -what do you mostly fish for –

How/where do you sell your catch?

Complete sales distribution table

Do you use any local suppliers?

Probe for how suppliers known to them, use of kinship, informal or formal networks

Complete supplies distribution table

Do you have a crew, if so how do you recruit them?

Probe for use of local networks

Do you crew for other people, if so, how do you know that skipper(s)

In this community how many people do you think make their living from fishing?

Are fishers isolated at all in the community or would you say they are integrated with other social groups locally?

Do people outside fishing relate to this identity?

How do you think other people in the community view fishers?

What role do women and the wives of fishers play in the industry?

Has this changed at all over recent years?

Probe for - involvement in other economic activities; any decline of the supporting role

Where are the social activities of fishers concentrated in this community?

Probe for - harbour, boats, family homes and the role of festivals

Sales distribution table

Thinking about your fish sales in terms of their financial value, could you tell me the approximate proportion of sales that go to the following areas, and the main types of catch that go to each area?

Zone	% sales (by value)	Main types of catch
<i>Example</i>	<i>25%</i>	<i>Herring, prawns, cod</i>
In Brixham		
Within a 30 min drive of Brixham		
Elsewhere in Devon		
Elsewhere in the South West region		
Elsewhere in the UK		
Elsewhere in the EU		
Outside the EU		
Total	100%	

Part 2 (Fishers only) Supplies distribution table

In the same way, thinking about your supplies (purchases) in terms of their financial value, could you tell me the approximate proportion of supplies that come from suppliers in following areas, and the main types purchase in each one?

Zone	% purchases (by value)	Main types of catch
<i>Example</i>	<i>25%</i>	<i>Nets, net repair equipment, fuel</i>
In Brixham		
Within a 30 min drive of Brixham		
Elsewhere in Devon		
Elsewhere in the South West region		
Elsewhere in the UK		
Elsewhere in the EU		
Outside the EU		
Total	100%	

Part 1: Everyone

What do you enjoy most about living here?

How do (did) you make your living? (not fishers)

Probe for - full/part-time/seasonal/casual work and combinations of employment

Would you describe this as a supportive community?

Probe for extent to which close knit' levels of trust; resilience; interactions with neighbour

Do you who feel that you belong here?

Yes No *NI 2*

Why is that?

What makes someone a local person here?

Probe for - different groups, incomers, migrant workers, also a sense of heritage or belonging.

Is there anything that you would describe as unique or special to (name of community) ?

Do you think that people from different backgrounds get on well in this area?

Yes No *NI 1*

Why is that?

Would you say there is a strong sense of identity associated with finshing and the sea?

What role does fishing play in the sense of community and in the history of the community?

What impacts does fishing have on the social fabric community?

Probe for community binds; traditions, way of life, language, dialect, knowledge

Are fishers isolated at all in the community or would you say they are integrated with other social groups locally?

Have you been to an arts event recently?

(Theatre, exhibition, arts festival, music concert)(*NI 11*)

Probe for - What, how often, where and who with

Do you play any sport regularly?

Probe for - What, how often, where and who with (NI 18)

Do you do any volunteering?

Probe for informal as well as informal, organization/s, frequency

Do you think that you can influence decisions here? (NI 4)

Yes No

How would describe your overall health?

(NI 119)

1 – Very good 2 – Good 3 – Average

Part 3: Social Networks (7-10 in each area, all categories of respondent)

Please name up to 20 people that are important to your These may be friends, neighbours business associates, professional advisors, specialists, etc They can be in any order						Personal?	01
						Business?	02
						Organisation?	03
Name	What is your relationship to them?	What role do they have in your farm/ business/place of employment?	How long have you known them?	How often do you talk to them?	Where are you most likely to meet or talk to them?		
<i>Doris Grant</i>	<i>Accountant</i>	<i>books and accounts</i>	<i>5 years</i>	<i>Twice a year</i>	<i>In office</i>		
<i>John Smith</i>	<i>Friend</i>	<i>Business ideas</i>	<i>6 months</i>	<i>Every few weeks</i>	<i>E-mail</i>		
							01
							02
							03
							04
							05
							06
							07
							08
							09

3.2 Telephone Questionnaire – County Councils and Regional Development Agencies

This project is interested in the way in which fishing influences the rest of the community and is a project that is funded by Defra. We are looking at how fishing influences not just the economy of a community but also the social and cultural life. That could be through the various industries and groups supplying the fishing industry, through tourism or via another route.

We are visiting 6 communities throughout England so that we can compare communities, one of which is within your county/RDA region.

The purpose of this interview is to get an idea of the tourism product/package within the area, and the extent to which fishing is a part of that – if at all.

This will enable us to identify the extent of integration of the fishing industry into the tourism sector, society and the economy.

General Questions – Ask All

- **How would you say the tourism market within your region has changed over the last 10 years?**
 - *Visitor types/numbers; Experiences sought; Length of season*
- **Do you have a specific tourism strategy? (We should have copy of if so)**
 - **IF YES – is there a specific ‘coast’ element within it? Details...**
 - *No – What are the principle features/components of it*
 - How is this strategy developed?
 - *Stats; Research; Inputs from whom?*
 - No – Why not?
- **How do you envisage the tourism strategy changing in the future? (ONLY if there is a strategy)**
 - *Structure; subject matter etc?*

- **What are the main sectors/targets of society with regards to particular attractions/activities**
 - *Younger people / Couples / Families / Pensioners*
 - *What are the most common forms of media for targeting these people?*
 - *Net / TV / etc*
 - *Do you have any plans for new marketing techniques?*
 - *Smartphones?*
- **Does the RDA/Council work with the Regional Food Group in any way?**
 - *If so, how and in what context? Tourism / Farmers Market / Business Support?*
 - *If not why not?*

Fishing Questions – Ask All

(NB Interviewees are tourism people therefore may not be best placed to answer some questions)

- **As an industry – does RDA/Council consider fishing to be an important/significant/major sector of the economy?**
 - *If NO - What is the most important sector of the economy within the county/region?*
- **What are the main fishing ports within the region?**
 - *Do these have a tourist element/industry at all?*
 - *Extent of it if so?*
- **Is fishing (INDUSTRY) something that is considered/‘on the radar’ with regards to tourism as far as the RDA/Council is concerned?**
 - *If YES*
 - *Why is this so? (Heritage / Active Industry / Food)*
 - *Which towns? (likely to be same as previous question)*

- If NO
 - Why is this so? (No interest / No market value / Other attractions more important?)
- **Is fishing (RECREATIONAL SEA) something that is considered/'on the radar' with regards to tourism as far as the RDA/Council is concerned?**
 - If YES
 - Why is this so?
 - What extent
 - Which towns?
 - If NO
 - Why is this so? (No interest / No market value / Other attractions more important?)

YES TO INDUSTRIAL FISHING IN TOURISM – ASK ONLY IF FISHING IS ON THE RADAR

- What do you consider to be the attraction for visitors regarding fishing?
- Are you aware as to whether visitors engage with the fishing community?
- Do have an idea/opinion as to what visitors think of fishermen?

NO TO INDUSTRIAL FISHING IN TOURISM – ASK ONLY IF FISHING IS NOT ON THE RADAR

- Has fishing EVER been part of the tourism package
 - If NO - Do you envisage it being so
 - If YES – How so, and why not now?

Thank you for assisting us with our research, do you have any other comments you would like to make, or any other questions regarding the work we are conducting?

Appendix 4: References

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