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Re-connecting and embedding food in place: Rural development and inshore fisheries in Cornwall, UK

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Abstract

Inshore fishing communities in England, as elsewhere, are facing challenges as they struggle to deal with policy measures aimed at reducing fishing effort. Drawing on findings from a study aimed at exploring the role of fishing for place-making and identity creation in Cornwall, we argue that there may be potential opportunities for developing inshore fisheries under the rural development paradigm. By considering lessons from the agri-food sector, this paper considers models of multifunctionality and the scope for translating these approaches into the fisheries sector. By re-embedding fish in place, through marketing, branding and enabling small-scale supply chains that recognise fisheries' wider role in communities, fishing can be understood as a 'multifunctional' activity in coastal areas by re connecting fishers with markets, consumers and the environment. To facilitate this, the importance of inshore fisheries to the socio-cultural and economic life of coastal communities needs to be recognised. Through valuing the often intangible benefits, such as identity, social cohesion and heritage, that fisheries bring to communities, fishing can be a useful development mechanism to enhance the economic and social sustainability of coastal communities. This creates new agendas for policy makers to understand the wider range of benefits afforded by marine fishing than productivist approaches alone. While initiatives are emerging to move the industry in this direction, coordinated and integrated policy development is needed to enhance these efforts and contribute to the creation of sustainable coastal communities with marine fishing as the focus.

1. Introduction

Estimates suggest that the world population's demand for food will increase by 50% by 2030 (Worldbank, 2006). Fish as human food reached an all-time high in 2008 (FAO, 2010a) and globally fish provides more than 20% of the average intake of animal protein for around 1.5 billion people and provides livelihoods for about 540 million people (FAO, 2010b). However, the world's fisheries have been in a steady decline since the 1980s, and it is now accepted that there is a "crisis" in fisheries (for example, Blades, 1995; Clark, 2006; McGoodwin, 1990). The FAO State of the World Fisheries and Aquaculture 2010 reports that 85% of marine fish stocks are either fully exploited, overexploited, depleted or recovering (FAO, 2010a) and in Europe 88% of quota stocks are overfished (EC, 2009). The decline in key stocks has been attributed to a combination of overfishing, climate change (Perry and Ommer, 2010), ocean acidification (Portner, 2008; Oarug, 2009) and, in coastal waters, eutrophication from sewage and agricultural run-off (Anderson et al., 2008). Despite a range of policies and efforts to reverse the decline, marine fish stocks remain threatened and policy decisions still favour the large-scale, high-tech, efficient sector, over the small-scale artisanal

sector, despite the recognition that the global fisheries crisis has mainly been caused by these large-scale industrial fleets (UNEP, 2005).

Furthermore, policy decisions often do not account for the important socio-cultural and economic contribution that smallscale fisheries have on coastal communities (Symes and Phillipson, 2009; Grafton et al., 2008; Urquhart et al., 2011). For many coastal communities in the UK, fishing is part of a broader network of socio-cultural and economic activities in fishing places. In these areas fishing is a deeply embedded tradition and “the glue that holds the community together” (Brookfield et al., 2005, p. 56). Fishing is important for the livelihoods of fishers, but also for tourism and local identity based on a rich heritage of fishing (Urquhart and Acott, 2013a,b, Acott and Urquhart, 2012). In a study of the fishing industry in Hastings, East Sussex, it was found that the local fishing industry inputs indirectly to the tourism sector in Hastings, and tourism spend attributable to the presence of a fishing fleet was estimated at 2% of the £110 million tourism spend in 2003, almost double the £1.3 million from landings (Nautilus, 2004). However, in many places the fishing industry seems to get little back from tourism. Given the uncertain situation faced by the inshore sector (and the fishing industry more broadly), this paper explores the potential opportunities and constraints for embedding fishing into local economies in a more integrated way, using examples from the Cornish fisheries. Drawing on lessons from the more developed agri-food sector, we argue that a rural development paradigm, which seeks to embed agriculture within local economies to bring added value and keep economic profitability local (Marsden et al., 1999) through, for example, the development of small-scale supply chains (Renting et al., 2003) and branding of place-based foods such as speciality regional products (Ilbery and Kneafsey, 2000), may offer some useful lessons for the marine fishing sector. Firstly, the idea of multifunctionality is discussed and the potential for applications in fisheries explored, focussing on multifunctionality as a rural development tool.

2. Lessons from the agri-food sector

The idea of multifunctionality in agriculture was introduced around 12 years ago (OECD, 2001). Multifunctionality recognises that agriculture provides other benefits to its primary function of food production, including amenity, biodiversity, landscape benefits, as well as contributing to the socio-economic vitality of rural areas (Schmidt, 2003). Marsden and Sonnino (2008) discuss three models of multifunctionality within agriculture and how they have been variously applied in UK policy. Firstly, the ‘agro-industrial paradigm’ restricts multifunctionality to the notion of pluriactivity, combining farming and non-farming incomes as a survival strategy. Second is the ‘post-productivist paradigm’ in which agriculture loses prominence. Post-productivist spaces are seen as arenas for consumption and farmers diversify into amenity and conservation activities that are reinforced through agri-environment schemes. Third is the ‘rural development paradigm’ where agriculture is combined with the socio-economic health of rural areas and is a tool for sustaining rural economies and culture. It re-emphasises food production and the symbiotic inter-connectedness between farms and the locale (Marsden and Sonnino, 2008). Multifunctional agriculture, in this regard, is no longer simply a survival strategy but is a rural development tool embedding agriculture within local economies to bring added value and keep economic profitability local (Marsden, 2003; Marsden and Sonnino, 2008; Morgan et al., 2010; Marsden et al., 1999). Marsden and Sonnino (2008) conclude that while UK policy has largely taken a pluriactivity or post-productivist approach, the rural development paradigm may offer ways to embed agriculture more sustainably into rural areas.

While the idea of multifunctionality has been widely used in primary industries such as agriculture and forestry, there has been very little use of the concept in extractive industries, including fisheries (Wilson, 2007). Some scholars have alluded to the multifunctional use of boats and gear but there are few conceptual notions of multifunctional fishing (Wilson, 2007), although Schmidt (2003)

discusses whether the concept of multifunctionality might be a useful analytical framework in fisheries. Using the example of coastal fisheries in Japan, Schmidt outlines how fishing can have multiple roles including social, economic and environmental multifunctionality, although he says little about how multifunctional pathways could be implemented among fishing communities (Wilson, 2007).

An examination of marine fisheries along the three models of multifunctionality outlined by Marsden and Sonnino (2008) above, reveals a number of similarities (Table 1). Many fishers, especially in the small-scale sector, have taken a route similar to Marsden and Sonnino's (2008) pluriactivity model (see, for example, Salmi, 2005). Under this paradigm, fisheries remain primarily productivist, but fishers may engage in non-fishing employment to supplement their income. These fishers are in survival mode with multifunctionality restricted to alternative income streams to combat policy-imposed restrictions on fishing effort or market conditions. Pluriactivity is nothing new to the inshore sector, where fisheries are often seasonal due to the migration of fish into local waters and fishers frequently fish on a part-time basis. More recently, coastal and marine environments are seen as important sites for nature conservation (e.g. Marine Protected Areas (MPAs)) and leisure activities (recreation and tourism). Fishers are adopting diversification strategies along the lines of Marsden and Sonnino's 'post-productivist' model. In this instance, fishers may combine commercial fishing with offering fishing or sight-seeing trips to tourists, or they may engage in conservation activities such as the Fishing for Litter initiative, which Cornish fishermen are involved in.

Table 1 Marsden and Sonnino's (2008) three models of multifunctionality in agriculture, and potential for adaptation in small-scale fisheries.

Models of multifunctionality	Agriculture	Fisheries
Agro-industrial paradigm	Pluriactivity where on-farm and off-farm incomes are combined in a strategy of survival	Small-scale fishers often undertake non-fishing work to supplement incomes.
Post-productivist paradigm	Diversification of farm activities – emphasis on amenity and conservation activities (often driven by agri-environment schemes).	Increasing evidence of fishers diversifying into tourism and conservation activities (see Roussel et al., 2011).
Rural development paradigm	Agriculture combined with socio-economic health of rural areas. Re-connection of food, producer and place. Maximising keeping profitability with the local economy.	Fisheries seen as embedded in the local economy. Importance of provenance – emphasising fisher, fish/seafood and place. Adding value and keeping profitability local.

However, as with agriculture, the notion of multifunctional fisheries under a rural development paradigm, whereby fisheries are more integrated and embedded in regions and communities, is rarely seen in policy. Yet, given the policy and scientific imperatives to protect and restore key fish stocks to sustainable levels, alongside meeting a growing demand for fish products, a rural development approach to fisheries may provide a process for promoting sustainable fisheries communities.

The following section outlines the methodological approach used in this study, before considering how the concept of place-based foods, which has developed in the land-based sector, could be further extended to fisheries as part of a strategy of sustainable rural development in coastal areas.

We conclude by considering the extent to which inshore fisheries satisfy the three conditions that Marsden and Sonnino (2008) indicate are essential for multifunctional rural development: (i) the activity must add income and employment opportunities to the agricultural (or in this case, fisheries) sector; (ii) the activity must contribute to the construction of a new agricultural sector that corresponds to the needs and expectations of society at large, and (iii) the activity must imply a radical redefinition and reconfiguration of rural resources in and beyond the farm (or fisheries) enterprise.

3. Method

This paper draws on findings from an Interreg 4a project entitled CHARM III (Channel Integrated Approach to Marine Resource Management). CHARM III involved a multidisciplinary team of 17 English and French partners, including marine biologists, climate specialists, legal experts, economists and social scientists. Part of the project was to explore the social and cultural contribution of marine fishing to coastal communities of the English Channel in England and France to understand the role of marine fishing in creating a distinctive sense of place and identity in fishing communities and the implications of this for sustainable development in coastal areas. A major part of the work focused on sense of place and identity (see Acott and Urquhart (2012), Urquhart and Acott (2013b); Acott and Urquhart (2014) for detailed findings), but this paper draws on the qualitative data from the Cornwall case studies to suggest ways in which fishing could be integrated more fully into local communities in order to promote sustainable development.

Cornwall is located in the south west of England and has an extensive coastline of over 300 miles and around 47 ports, most of which are or have been fishing ports. Its sandy beaches, dramatic coastal landscapes and mild climate make it a popular tourist destination with over 5 million visitors annually. Cornwall is in an Objective One area, a programme that targets areas in the European Union where Gross Domestic Product (GDP) per capita is less than 75% of the European average. In the region, agriculture, fisheries and tourism have a higher contribution to incomes than in other regions. Almost 28,000 tonnes of fish and shellfish are landed annually, with a total value of just over £42 million. There are just over 700 vessels in total, made up of about 600 under 10 m vessels and around 10 m vessels (MMO, 2011).

Forty-one participants took part in the research across ten case study sites in Cornwall (Fig. 1). Case studies were chosen to include a wide range of places in terms of scale and fishing effort, from the busy fishing port of Newlyn with 140 fishing vessels down to Penberth, with just half a dozen small open day boats launched from the shingle beach. Semi-structured interviews were used to explore the perceptions of both fishers and the wider community, as well as associated industries such as tourism, with participants including fishermen, representatives of the fishing community, fishermen's organisations, tourism providers, heritage providers and artists (Table 2). Tourism providers included a representative from Cornwall County Council's tourism office, Visit Cornwall, along with holiday home owners/agents and restaurant owners. Heritage providers included museum curators, the National Trust and historic society representatives. The fieldwork was conducted over a 4-week period in August 2010, with interviews ranging from 10 min to 120 min in duration. All interviews were transcribed verbatim and the transcripts were organised using NVivo9 software and coded into themes. The following sections draw on the interview data to illustrate the potential for improving the integration of fish and seafood into place as a rural development tool.



Figure 1 Case study sites in Cornwall, south west England.

Table 2 Participant types in study.

Participant type	No. interviews
Fisherman	12
Artist/Gallery	7
Heritage provider	7
Tourism provider	6
Fishermen's organisation	4
Harbour master	2
Fishing community	1
Fish processor	1
Fish buyer	1

4. Results

While the main focus of our research was to understand the contribution of inshore fishing to sense of place in coastal communities, it became apparent during the analysis that one of the main emergent themes from the data was related to product and place, and the need for improved local (and national) markets for fish and seafood. The findings suggested that there may be opportunities for developing fisheries along the lines of the rural development paradigm, through embedding the product (fish and seafood) into place, adding value and capturing more of the profitability locally (Fig. 2). The demand for authenticity and provenance of fish and seafood, along with the increased pressures faced by inshore fishers are drivers for embedding fisheries into local rural economies. Fig. 2 also outlines that in order for more integration of fisheries in rural development, a number of factors need to be considered: localised governance mechanisms, local champions for fish and seafood products, short supply chains, adding value locally and overcoming issues of certification. The following sections consider these factors through the findings of this study.

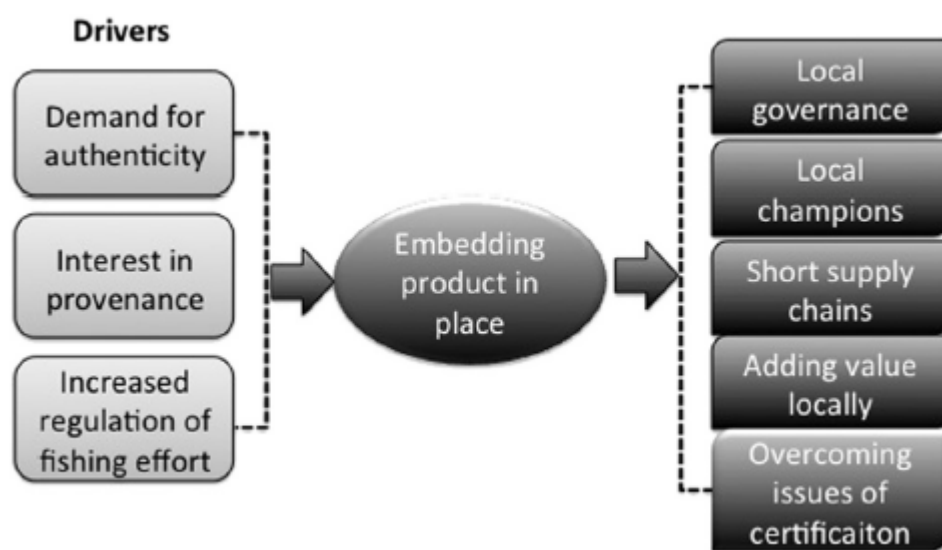


Figure 2 Developing the rural development paradigm for fisheries.

4.1. Fish: a place-based food

In the wider food market, many consumers have little knowledge of how their food was produced (Morgan et al., 2006). Yet there is increasing demand from consumers to know where the products they purchase come from and how they were produced (Ilbery and Kneafsey, 2000). This growing interest in provenance is attributed to public concern over health and safety of food (in light of public health scares such as BSE), but it is also attributed to a demand for 'quality', and a renaissance in 'local' food (Marsden et al., 2000).

Furthermore, a number of commentators have recently asserted that when food is treated as purely a commodity and stripped of its provenance and social context, either by branding by global corporations or sold as a generic product, it can be damaging to producer communities (Busch, 2010; Loconto and Busch, 2010; Reed et al., 2013) as well as the ecological resource itself. In response, there has been a surge in alternative food networks, such as organic (Reed, 2010), fair trade, speciality regional products (Ilbery and Kneafsey, 2000) and farmers' markets (Kirwan, 2004). According to Whatmore et al. (2003, p. 389), alternative food networks are examples of "food markets that redistribute value through the network against the logic of bulk commodity production;

that reconvene 'trust' between food producers and consumers; and that articulate new forms of political association and market governance." What is common throughout these alternative food networks is the importance of reclaiming the value of products locally, both in terms of the economic value to the producer, but also reemphasising the value of 'place' that reconnects producers to markets, consumers and the environment.

In this regard, during the last 20 years, there has been an increase in the requirements for traceability and labelling in EU food and drink legislation (2081/92 and 2082/92) to protect traditional product names (Protected Designation of Origin (PDO)) or a recognised geographic origin (Protected Geographical Indication (PGI)). Currently, there are five fish products from the UK with PGI registered product names under the Protected Food Names scheme, including Scottish Farmed Salmon, Arbroath Smokies, Whitstable Oysters, Cornish Sardines and Traditional Grimsby Smoked Fish (ADAS, 2009). PGIs are spatially specific and seek a strong association between place and product provenance (Ilbery and Kneafsey, 2000). This can give protection to small producers for products that are embedded in their region (Morgan et al., 2006).

There are a number of initiatives that seek to reconnect products to place, such as the Slow Food Movement that aims to reconnect people to where their food comes from and educate them about how it is produced. Similarly, the Scottish government has developed its food and drink policy, and associated Provenance on a Plate toolkit, to enable consumers to be better informed about the origin of their food and to ensure that local communities benefit from the links between producers and consumers (Government, 2011).

Ilbery and Kneafsey (2000) discuss the role of place-based foods as the locus for rural development through the role of regional speciality food products (SFPs) as an important niche market. They assert that SFPs are socially constructed with value-laden concepts such as 'authentic', 'healthy' and 'traditional'. What is of particular note is that the idea of 'quality' is often associated with particular places or regions (Ilbery and Kneafsey, 1998).

Similar to land-based foods, there is a growing interest in the provenance of fish products, of knowing where the product has come from, who caught it and how, as described by one interviewee in our study:

"And that sense of place is really important on all levels. You know whether it's for the local community or for the tourists. You know the fact that you're coming here and you're eating something that was caught by that man there, just out there is special. That authenticity of experience as well as keeping it real" (Jane, heritage provider)

Initiatives such as the South-West Handline Fishermen's Association promote transparency and traceability in their products. They have established a tagging system that enables customers to identify which fisherman and boat caught the fish, when it was landed and how it was caught. This roots and embeds the fish within the locale. There is an ecological place distinctiveness, with fishing places associated with particular collections of fish species. Place and product are combined in a network of social, ecological and economic associations. Cornwall provides a useful example in this regard, as the county is perhaps the English region most associated with good quality fish and thus, creates a demand, as one participant explained:

"If you look at virtually probably any great restaurant in London, all will have Cornish fish on it. I think because people want Cornish fish, and so it's synonymous with quality.. and I don't know whether Devon mackerel, or Sellafield mackerel [laughter] or something like that would have the same kudos" (Douglas, tourism provider)

Indeed, the use of place when branding products has been utilized to increase consumer perception of a product. For example, Sainsbury's reported an increase in sales when the Patagonian Toothfish was rebranded as the Chilean Sea Bass (Sainsbury's, 2011). In Cornwall, the pilchard has been rebranded as the Cornish sardine and has a PGI protected food name, which guarantees that the product has been caught within 6 miles off the coast of Cornwall, and landed and processed in county. Of course, whether migratory species of fish can be considered as deriving from one particular place is perhaps questionable. However, consumers often associate the places where fish is caught with quality, as one fish buyer explained:

"There's a demand in London from particular restaurants who like to source fish from the coast, rather than have it from an inland merchant, they like to think my fish is coming from St Ives, or Newlyn or Brixham... I mean, my mackerel is St Ives mackerel and it always markets nicely. I mean historically St Ives mackerel in the summertime had a very good reputation. I tell people my lemon sole is from Looe. because they recognise Looe as being that specialist port and specialised in lemon soles like. My crabs are south coast crabs, because they're a lot better on the south coast than the north coast. My lobsters are north coast lobsters because they're a lot better on the north coast than the south coast" (Ben, fish buyer)

Much of the interest in provenance is coming from the hospitality sector, with restaurateurs interested in marketing fish that can be traced back to its origin, not just in terms of place, but also in how it was caught and by whom. There is a growing market for sustainably caught, and often certified, fish, as one participant outlined:

"There seems to be certainly from proper foodies there's a much greater appetite for information in terms of provenance now, so we see through some of the marketing we do, some of the websites that we've got that you get a lot of feedback from consumers all over, but particularly restaurateurs, looking at, they're interested in sort of sustainability stuff and looking at who caught the fish, was it a Cornish line caught bass or was it a this or was it a that, whereas probably 10 years ago you wouldn't have had that level of information really, or appetite for it, so again that's probably a good thing for us because it means that often we can, the price will trade up on similar products from elsewhere so that's good for the fishermen" (Joshua, fishermen's organisation)

In order to promote fresh local fish, a number of participants talked about the need for a local champion, such as a celebrity chef, to raise awareness. Rick Stein in Padstow was given as an example of this.

"Rick Stein has certainly been influential in not just putting sort of Cornwall on the food map but in terms of linking industry with what ends up on your plate" (Lucy, tourism provider)

"But I got to say the TV chefs they've done the fishing industry so much good because there's so many more people cooking and eating fish now" (Jeremy, fisherman)

Along with an increase in demand for fresh, local fish, celebrity chefs are also given credit for raising the profile of some less popular fish species, which can be cooked as an alternative to species with reduced stock levels:

"I mean gurnods were almost worthless, then you've got someone like Rick Stein on television showing how to cook a gurnod and how good they are, and they are. . All of a sudden they're popular and instead of making 20p a kilo, they're making £4 a kilo, for the big ones" (Andy, fisherman)

Fishermen reported that the species they are selling has changed:

"I don't suppose we sold a mussel until 12, 13 year ago. We now sell about 4 tonne a week. Oysters we sell a couple of thousand a week" (Ben, fish buyer).

So, through the championing of alternative products, there is a price premium that fishermen can benefit from. These examples of place-based re-branding of products and promoting alternative fish and seafood species may enable fishermen and regions to add value to their products.

4.2. Constraints and opportunities for fish as rural development tool

Fishermen in Cornwall, as elsewhere, increasingly have to seek new ways of working to remain viable. They need to capitalise on the strength of the brand of Cornish fish. Many of the participants in our study felt that fishermen need to be able to increase the added value of their product, as illustrated by two fishermen:

"You've got to catch less fish for more money. The general public have got to pay more money, the fishermen have got to be on strict quotas which they are now, I agree. And they've got to get more money for their fish" (Craig, fisherman)

"You have to get the fish in a good quality fish to the customer as quick as possible, the cheapest way as possible for the best price possible. That's how the industry will survive. The only way it will survive. It's not like you can keep going out catching fish. Those days are gone thank God" (Gordon, fisherman)

So there was a recognition that there needs to be a focus on quality and not quantity. By marketing fish as locally caught, fish can often command a premium:

"More places are sort of recognising that fresh quality and being able to write locally caught and people buy locally caught and they'll spend a little bit more money knowing that it's locally caught you know so, I think it's very good, it's a very good thing" (Dan, fisherman)

Indeed, it is by re-emphasizing the social context and provenance of the product that the economic value can be kept locally. There are examples of good practice that can be used to illustrate the potential for fisheries. For instance, one fishing family in Cornwall has developed a business model to capture the value of the fish they catch by processing it and marketing it direct to retailers. They supply direct to a number of high quality restaurants in London, processing and couriering the catch to customers on a daily basis in order to gain the highest possible price for their products. They also sell their fish locally through the local farmers' markets. Most of the fish they process and market is from their own fishing boat, with a small proportion sourced from other local inshore boats. Through a combination of a short supply chain and ensuring a fresh, high quality product, this family is able to add value and market their fish at premium prices. Other examples include the recent interest in establishing community supported fisheries in Cornwall and South East England, along the lines of the successful Canadian community supported fishery in Halifax (Elton, 2011). Furthermore, in terms of embedding fisheries within rural development more generally, there are clear links between small-scale fisheries and the wider issue of food security and food sovereignty through both consideration of food security for poorer people in the UK (i.e. opportunities to purchase local, fresh, high quality fish at reasonable prices) and wealthier consumers who can afford to pay a premium for fish. In this regard, there is potential for small-scale fisheries in the UK (and elsewhere) to contribute not just to local community economic development but to the larger social justice movement (see for example, the International Collective in Support of Fisheries Workers ICSF, <http://www.icsf.net/>).

While there are clear opportunities for integrating small-scale fisheries into broader local economic and social networks, there are a number of barriers that will need to be overcome, not least epistemological differences between the agriculture and fishing sectors. In the UK, fishing has developed along sectoral lines, where agriculture has developed along community and territorial lines. To illustrate, a study on the social impacts of inshore fishing in England, found that fishermen and their representatives were used to debating fishing policy as a sector, such as quota allocation or exclusive fishing zones, whereas they were less familiar with models of integrated rural development and partnership arrangements (Reed et al., 2011).

However, there are positive signs, such as the 4th Axis of the European Fisheries Fund, which promotes the sustainable development of fisheries areas through a territorial approach. By shifting the focus to the community/territory, rather than the sector, fisheries can perhaps be better integrated into the wider economic context. The Fisheries Local Action Groups (FLAGs) are an example of an initiative, funded under Axis 4 and administered in the UK by the Marine Management Organisation (MMO), which aims to sustainably develop communities dependent on fishing. Cornwall is one of six communities in England to be designated as a FLAG and will receive almost 1 million euros to invest in developing more sustainable economies.

Indeed, in order to survive, fishing communities need to be able to adapt to change (both exogenous and endogenous) and develop strategies for long-term sustainability. Fishers traditionally have been fairly autonomous, relying on a small network based mainly on family ties. Increasingly, fishers may need to work more cooperatively and diversify their market portfolio to improve their competitiveness in the market and, where possible, 'scale up' local food production. Fisher networks may allow fishermen to market their catch in a more streamlined and focused way, perhaps through the use of online direct selling. However, this will involve overcoming the culture of many fishermen, who want to catch fish and are not interested (or have the time or energy for after the effort of catching) in processing or marketing their fish. Yet, there are positive signs that the younger generation of fishermen, who tend to be more forward-looking and entrepreneurial, are willing to adapt to a changing market, such as the 'Leaders' identified in the UK government's typology of English fishermen (CR, 2009).

In our study there was concern that some sustainability organisations, such as the Marine Stewardship Council (MSC), are not equally accessible due to the high investment costs. Small-scale fishers, fishing in a low key and sustainable way, may not be able to afford certification and so do not have access to certain markets. One participant explained how initiatives such as Fish2Fork, which reviews restaurants on the sustainability of their seafood, may perversely create a demand for certain products over others (which actually may not be more sustainable). In order to remain competitive, one participant in our study felt obliged to get MSC certification for mackerel, but is doubtful of the economic sense:

"I've gone through the audit process now for MSC certification. It cost a huge amount of money and I'll never ever make that expense back on the mackerel. Because mackerel doesn't make such a big proportion of our business, so it's not only paying for the audit but we've got to pay for all the boats that land here to me, they've got to pay to sign up to be members of the handline association. There's a whole chain of custody you see. So the boats have got to be members of the handline association, they've got to separate their handline mackerel out from their net caught mackerel. So massive amount of admin for me, but I've done it so that I can tell the customers don't buy your mackerel from somewhere else" (Phil, fisherman)

Another important issue underlying the economic performance of fish marketing is the limited UK consumer demand for fish. In the UK, 80% of purchases of fish and seafood products are for just five species: cod, haddock, prawns, salmon and tuna (Sainsbury's, 2011). In January 2011, the supermarket Sainsbury's reported sales of "alternative" species of fish and seafood, such as pollock, mackerel, mussels, scallop and squid, increased after being championed by celebrity chefs in Channel 4's Fish Fight campaign (Sainsbury's, 2011). Yet, despite these encouraging figures, a consumer poll also showed that although three quarters of people are aware of messages about sustainable fishing, only one in ten said they make sure the fish they buy is from sustainable sources (Sainsbury's, 2011). Conversely, research undertaken by the Seafood Choices Alliance found that 90% of consumers are more likely to buy seafood labelled "environmentally responsible" and over 50% would pay 5e10% more for sustainable seafood (SCA, 2007). However, imports of fish into the UK increased by 46% from 1998 to 2008 (NE, 2009), and the main retailers, supermarkets, use supply chains with certification or labelling schemes. This can impact small-scale individual fishermen who are unable to compete in this market place, due to the high investment costs of certification schemes like the Marine Stewardship Council (MSC). Much of their catch is sold to fish merchants where it is traded at fish auctions and the majority (up to 80e90% on the south coast of England) is exported for processing.

4.3. Place, fish and tourism

So far we have considered embedding fish within place in terms of branding and marketing. More specifically, coastal areas, such as Cornwall, are important tourism areas and there may be opportunities for linking fishing to tourism through local food. Sims (2010, 2009) suggests that the creation of iconic products can be used to brand a region for tourism development.

For many rural areas tourism has been seen as an opportunity to boost economic sustainability (Clark and Chabrel, 2007; Woodland and Acott, 2007) but tourism can also have negative impacts on host communities (Shaw and Williams, 2004). There is a need to promote tourism consumption that enhances, not detracts, from the quality of rural areas (Sims, 2010) by reducing food miles, boosting the local economy and creating 'iconic' products that can be used to brand the region for tourism development (Sims, 2010; Clark and Chabrel, 2007; Woodland and Acott, 2007).

As alluded to in the Introduction to this paper, fishing has indirectly contributed to the tourism industry in coastal areas by creating a particular sense of place based on fishing heritage. Tourists expect to see fishing boats in the harbour and enjoy watching the activities of fishermen. Part of their holiday experience may involve eating fresh, local (or the perception of local) fish in a harbour-side restaurant. Indeed, most of the participants in our study agreed that fishing was an important contribution to Cornwall's tourism industry. This was highlighted by one participant:

"I think actually being in a place where there are real live people that you can talk to in the pub or on the harbourside does bring things to life, I think again it adds another dimension to people's holiday the fact that they're not living in some museum" (Lucy, tourism provider)

Thus, by recognising and valuing the relationship of fishing and tourism, both in terms of the contribution that the existence of an active fishing industry and associated cultural heritage has on the appeal of a place for tourists, along with the availability of local fresh fish and seafood, tourism can contribute positively towards supporting a thriving sustainable small-scale fishing fleet in coastal areas.

5. Discussion and conclusion

This paper has discussed the potential for the development of the small-scale fisheries sector in Cornwall using a multifunctional rural development approach focussing on re-embedding fish products in place. The inshore sector is facing an uncertain future, given the continued ecological problems with key fish stocks and policy measures to reduce fishing effort. This paper argues that there may be opportunities for embedding small-scale fisheries within regions and local communities by drawing on the rural development paradigm from the agriculture sector.

However, according to Marsden and Sonnino (2008), under the rural development paradigm, to be multifunctional and, therefore, to contribute to rural development, an activity must satisfy three conditions (Marsden, 2003). We conclude by evaluating the inshore fisheries sector to assess the potential for development strategies that meet these criteria and thus, embed fisheries within its environment and the potential for sustainable development of coastal fishing communities.

The first criterion (Marsden and Sonnino, 2008) states that an activity must add income and employment opportunities to the agricultural (or in this case, fisheries) sector. The approach outlined in this paper suggests that by embedding fish more explicitly within the locale, through place marketing and branding, improved income can be achieved for fishers. Cornwall fish is associated with 'quality' and thus can command a premium. By re-instating the importance of provenance, the value of local fish can be captured and the economic benefits kept within the local community, rather than lost out of the region. Furthermore, adopting a food chain perspective that focuses on small-scale supply chains may increase the revenue for fishers. By creating a more local market in the hospitality sector (restaurants, cafes, hotels) and through more localised public procurement policies, fishermen may be able to increase the return on their catch, enabling them to catch less fish for the same level of income. There may also be scope for the development of fisher networks in order to develop novel ways to market the catch, such as through online direct selling and the promotion of alternative, non quota, fish species.

Marsden and Sonnino's (2008) second criterion is that an activity must contribute to the construction of a new agricultural sector that corresponds to the needs and expectations of society at large. Indeed, with the media coverage of the fisheries crisis, consumers are becoming more aware of sustainability issues and fish stocks. There is increasing demand for traceability, to know where the product was caught, how it was caught and by who. Fisher organisations, such as the South-West Handline Fishermen's Association, are an example of an activity that meets the demands of society, through their tagging system so that consumers can trace the provenance of the product.

The third criterion outlined by Marsden and Sonnino (2008) is that an activity must imply a radical redefinition and reconfiguration of rural resources in and beyond the farm (or fisheries) enterprise. Yet it is noted that in the agriculture sector, UK agricultural policy has prioritized the first two criteria (Marsden and Sonnino, 2008). Indeed, within fisheries the omission of a reconfiguration of fisheries beyond the sector is perhaps more profound. However, we assert that in order for this criterion to be met, the importance of inshore fisheries to the socio-cultural, ecological and economic life of coastal communities needs to be recognised. Inshore fisheries contribute not just to livelihoods of fishers, but also to community cohesion and identity, founded on a rich cultural heritage based on fishing. By valuing these often intangible benefits that fisheries bring to communities, fishing can be a useful development mechanism to enhance the economic and social sustainability of coastal communities. By re-embedding fish in place, through marketing, branding and enabling small-scale supply chains that recognise its wider role in communities, fishing can be understood as a 'multifunctional' activity in coastal areas by reconnecting fishers with markets, consumers and the environment. By taking a greater interest in the social and cultural impacts of marine fishing opportunities are created to consider how fisheries benefit from being considered within a rural

development paradigm. This creates new agendas for policy makers to realise a wider range of benefits afforded by marine fishing than productivist policies alone. Such a perspective, if widely recognised in policy making might make an important contribution to the creation of sustainable coastal communities with marine fishing at their heart.

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