



The Cultural Status of Orkney's Fishing Industry

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1. Executive Summary

Culture is dynamic, its meaning and relevance subject to constant change depending on the context in which it is viewed. Individual and collective behaviour influence -and are influenced by- the culture and values of their community. Orkney's fishing industry may be classified as a 'defended' community, with relatively little interaction with the wider Orkney community when compared to industries such as agriculture, renewable energy, and tourism. Despite this, the industry has been able to capitalise on its social network to create community assets benefiting the industry, and the advent of technology such as Facebook has increased the ability of the industry to engage with those outside of the community. Using a value-contribution matrix we are able to explore the positive and negative interactions between the fishing industry and the wider community, as well as gain insight into the types of social capital held by the fishing industry.

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2. Introduction

There are over 100 fishing vessels registered to Orkney, the majority of which are under 10m and fish for crab and lobster using pots and traps. The number of vessels within Orkney has been slowly declining, and has decreased by 6% between 2008-2016, employing around 170 individuals full time (all of whom are male). Orkney's fishing community is characterised by strong relationships between individuals and relatively high levels of bonding and bridging social capital, which is reflected by the number of community assets (such as research organisations and shared infrastructure).

Despite the social capital of the industry, fishers feel isolated from the larger Orcadian community. This isolation may stem from the 'hidden' nature of the fishing industry- with more visible industries such as agriculture, tourism, and renewable energy occupying the forefront of local consciousness. However, new technologies in the form of Facebook have provided platforms for local fishers to engage with those outside the industry, helping build connections and understandings throughout the community.

How the fishers perceive themselves and their place in the wider community has implications for how the industry is able to engage with local and national decision-making processes and respond to industry changes. Community resilience is dependent on the ability of a community to organise across scales, and a lack of trust between fishers and decision-makers hinders fisheries and marine management.

Using a value-contribution matrix we are able to understand some of interactions (positive and negative) between the fishing industry and the Orcadian community. These interactions may provide insight to how the industry can continue to create connections across scales to benefit both fishers and the communities of which they are a part.

3. Methodology

Data for this study was acquired from multiple sources including literature reviews of scientific papers and public documents, direct observations, and formal and informal interviews with fishers, fisher families, processors, wholesalers, suppliers, and local decision-makers. Fifty-three interviews were carried out, thirty-four of which were with active fishers. Each interview was conducted using a series of open-ended questions, designed to touch upon the core themes of the project (economic values, social values, and cultural values), while allowing interviewees to bring up their own views and concerns organically, to ensure their unique experiences were not lost. Each interview was recorded, and transcribed and analysed using the qualitative analysis software NVivo 11 Pro. At the end of each interview, interviewees were asked to recommend someone else who might be interested in being contacted to take part in the study. This 'snowball' method of accumulating contacts within the

industry not only ensured maximum coverage of individuals who were contacted, but also gave insight into the personal connections within the industry.

All interviews were analysed using NVivo 11 Pro, the methodology of which involved a cyclical process of coding and analysis. Key themes in each interview were assigned a unique code, which could then be compared with codes and themes from other interviews. When potentially important or interesting relationships between these themes were analysed, further coding occurred. Data was subject to a cycle of transcription, analysis, exploration of the results, and further analysis.

3.1 Value-Contribution Matrices

This project has utilised a value contribution matrix, as described by Andrew Song (2017) to identify and categorise the values expressed throughout this project. Such a matrix categorises identified values as either objective, subjective, or relational (see Section X), creating a comprehensive overview of the various contributions made by a small-scale fishery to varying levels of stakeholders, while simultaneously reflecting the diversity of the fishery (Song, 2017). The matrix allows for a relational approach to be taken when assessing the contributions of a fishery, following the concept that there are no unimportant values, as each value reflects a personal or group belief about what is ultimately desirable (Song, 2017). The matrix assesses values according to the impact they have on the stakeholder group as either positive (denoted by a +) or negative (denoted by a -): for example, a subjective value for a fisher would be a high level of job satisfaction (+). Table 1 shows the format of a value-contribution matrix, as well as the position of values within it.

	Fishers	Community	Society
Objective	-Personal Economic Wealth -Livelihood	-Economic Wealth	-Societal Wealth -Industrial/scientific Knowledge
Subjective	-Personal Identity -Freedom -Job-satisfaction	-Infrastructure	-Ecological Impact
Relational	-Conformity -Affection -Obedience	-Social Cohesion -Sense of Belonging -Ecological knowledge	-Social Recognition -Public Image -Security -Social Order

Table 1:- Example layout of a value contribution matrix, adapted from Song, 2017

4. Key Concepts

Understanding the place of the fishing industry in Orcadian culture requires an understanding of concepts such as identity, place, wellbeing, and community, and how these concepts interact with one another.

4.1. Identity

Identities can be individual or collective, and both are defined through the creation of boundaries via internal and external confirmation. Identity, whether that be the identity of an individual or a community, is complex, multi-faceted, and dynamic, re-enforced through the process of active identification of similarities and differences via interactions with other individuals or communities (Williams, 2008). The process of identification occurs through internal and external identification, with internal identification being how an individual identifies themselves, and external identification being how others identify and subsequently behave towards the individual.

Fishing is a driver of the formation of individual, group, and community identity and as such it promotes a share sense of cultural meaning (Acott and Urquhart, 2017). Those involved in fishing often have a strong sense of identity based around their occupation, while self-identifying “fishing communities” use the industry to create and express collective identities (Acott and Urquhart, 2017; Williams, 2008).

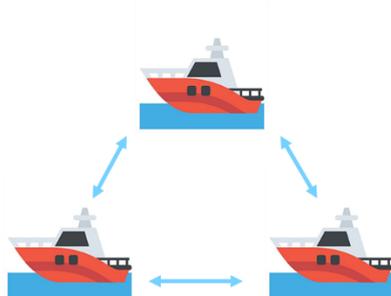
Physical places, when associated with identities, are imbued with particular meanings, given to these places by those who claim association with that place (Williams, 2008; Acott and Urquhart, 2017). The relationship an individual, group, or community has with a place can be split into three categories of place attachment, place identity, and place dependence, each of which is influenced -an in turn influenced by- the social and cultural values of the community or groups within the context. Thus, a sense of place is said to be co-produced (Acott and Urquhart, 2017).

4.2. Social Capital

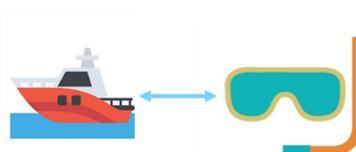
Identity can be a powerful force, influencing an individual’s or community’s sense of wellbeing and facilitating the creation of social capital and other personal connections. Social capital is a multidimensional concept that can be defined as the connections that underpin social networks, allowing individual actors or groups within a social network to access (or strengthen) their resources (Bakker, 2016). Social capital increases in proportion to the size of an individual’s or group’s social network, revealing its contextual nature in that different types of social capital are produced depending on the scales and types of interactions within and between social networks (Bakker, 2016).

There are three types of social capital: bonding, bridging, and linking. Each type is the result of networking activities that occur naturally within and between social groups, and each performs a different function for those involved (see figure 1). Bonding social capital refers to the connections within a community and promotes community cohesion and co-operation. Bridging social capital refers to horizontal connections made outside of a community with other, similar, communities. Bridging social capital allows communities to gain access to new resources (such as knowledge). Finally, linking social capital refers to the relationships created across scales (traditionally with governance actors and decision-makers). Linking social capital allows individuals and communities to access governance opportunities and become involved in decision-making processes (Bakker, 2016, 10, 11).

Bonding Social Capital



Bridging Social Capital



Linking Social Capital

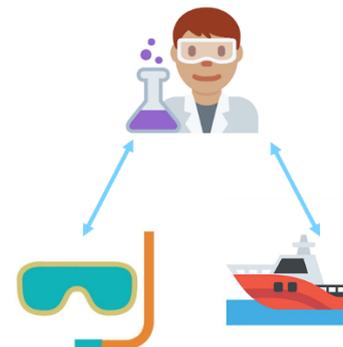


Figure 1:- The three different types of social capital: bonding, bridging, and linking. Bonding social capital refers to the connections made within a community, while bridging social capital refers to relationships made between similar communities. Linking social capital refers to relationships across scales and allows individuals and communities to become empowered and involved in decision-making processes (Bakker, 2016;, 10, 11). Images from: wikimediacommons.com.

The concept of social capital assumes that resources created through social interactions exist within communities that create pathways for collaboration, action, and chance. Ultimately social capital forms the basis for the construction and maintenance of other concepts such as individual and community's identity, wellbeing, and community resilience (Bakker, 2016).

4.3. Community

A group of individuals sharing a similar identity is the foundation of a community (Williams, 2008). Identities -whether they be individual or collective- are defined by the creation of boundaries (i.e. defining oneself by defining what one is *not*), thus a community can be seen as the ultimate boundary-expressing tool- whether these boundaries be physical or more symbolic- that are used to express a

collective identity (Williams, 2008). Typically, communities that are based on social ties and a sense of shared history, allow for the constant re-evaluation of similarities and differences. It is important to note that an individual can belong to multiple communities- for example, a community based upon geographical locality or shared experiences and history (for example, fishing). The unique set of history and values of a community make it unique, and give rise to community assets, which can be seen as the specific characteristics that can either enable or prevent communities from developing and interacting with other communities or individuals (Bakker, 2016). These resources allow a community to engage with other communities, individuals, or government bodies- a process known as community resilience.

4.3.1. What is a “Fishing Community”?

Traditionally, a fishing community has been defined by the proportion of its population that are engaged with the fishing industry, with most definitions requiring between 5 and 10% of the local workforce to be involved in fishing (Scottish Government, 2009). While these definitions are helpful, they fail to account for the more complex and intangible relationships between a community and its fishing industry, making us underestimate the importance of the industry to its surrounding area. Alternative definitions, that encompass the social and cultural values of the industry, have been proposed. Brookfield et. al. (2005) suggest that fishing communities are communities where “...*the community understands and makes sense of the world from a perspective that is garnered from years of involvement in the fishing industry [...] fishing is the glue that holds the community together*”.

Using definitions such as the one above allows our understanding of how local communities understand and relate to the fishing industry to become more nuanced, as seen with the concepts of ‘real’ and ‘virtual’ fishing communities (Reed et. al., 2011). Where ‘real’ fishing communities exhibit ‘real’ dependency in the form of economic dependency (and can therefore be defined using the more traditional parameters), ‘virtual’ fishing communities rely on the *idea* of the fishing industry, using the image of the industry as a cultural icon upon which it can found a tourist industry or create markets for seafood products (Reed et. al., 2011). While ‘virtual’ communities may not be economically dependent on a physical fishing industry and its output, they are economically dependent on their ‘virtual’ industry, which has the potential to exceed the value of a ‘real’ industry (Scottish Government, 2009).

As the fishing industry undergoes changes in the form of fleet consolidation, and the average age of fishers in the industry increases, what have historically been ‘real’ fishing communities may gradually change, becoming increasingly ‘virtual’, as more and more individuals leave the industry. This process, while potentially benefitting the community as a whole, often results in the de-valuation of the fishing

industry, with Jentoft (Scottish Government, 2009) describing the commercialisation of the industry as “*reducing coastal culture to a caricature of itself*”.

4.4. Community Resilience and Transformability

Much like identities, communities are constantly changing in response to internal and external pressures. The resilience of a community refers to its ability to adapt and change while remaining within ‘critical thresholds’ (the characteristics that define the community). Resilience is an on-going process that can be achieved through purposeful decision-making in response to change and relies on access to assets (via social capital) that allows the community to exercise and legitimise their authority (Kawarazuka et. al. 2016; Folke et. al. 2010; Bakker, 2016). Community resilience theory assumes that every community is capable to some degree of responding to change and to taking ownership of development processes, utilising its natural assets to do so, although how a community responds is unique to the characteristics of the community and the situation they face (Bakker, 2016; Kawarazuka et. al. 2016; Folke et. al. 2010).

There are two types of resilience: general and specified. Where general resilience refers to resilience against all kinds of challenges, including completely novel ones, specified resilience refers to resilience towards particular shocks (Kawarazuka et. al. 2016; Folke et. al. 2010).

In situations where a community is unable to respond to change in a way that allows it to stay within critical thresholds it is said to undergo transformation, in which the previous system is dismantled and a new one replaces it. Associated with innovation, novelty, and shifts in community values and social networks, transformation occurs across scales, with small-scale transformations encouraging transformation on larger scales, while drawing upon system connections and relationships to support its changes (Folke et. al. 2010). The transformation process has three stages: 1) the preparation of the system for change, 2) using the crisis as an opportunity for transformation, 3) creating resilience in the new system (Folke et. al. 2010).

4.5. Place

Often the meaning of a place is maintained and created through the constant and ongoing expression of the meaning it has been assigned (e.g. through recollections of the past), and in these cases, the place can become symbolic of the community that uses it. Places can be seen as being a physical embodiment of the socio-cultural values of an area or a community, and frequently communities are associated with multiple places -or ‘domains’. The character of these domains become influenced by the activities of those using them through the physical expression of identity or community- known as cultural objects or symbols. These objects and symbols can perform an important role within an area,

signalling to the local community the presence and ongoing activity of an industry (Williams, 2008; Acott and Urquhart, 2017).

In the case of fishing, the industry can be seen as having three key domains: the domain of the sea (a private domain, only seen by fishermen, where the physical work is carried out), the domain of the household (where additional work is carried out enabling the fisherman to return to the sea), and the public domain (the domain in which the identity and the performance of identity of fishers can be seen by those outside the industry) (Williams, 2008).

Within Orkney, piers can act as symbols of the fishing community as a whole, and the decline of the fishing industry is echoed in the decline of the piers (for example, archives in the Stromness museum depict a harbour full of fishing vessels, whereas now there are significantly fewer).

Additionally, due to Orkney's island nature, its concept of place can be seen to be stronger than elsewhere in Scotland. Island identity and communities are both defined and re-enforced by the clear geographical boundaries that separate them from other places. Orkney's geographical layout easily allows for the creation of not only an 'Orkney' community, but for even smaller communities defined by individual islands (such as Westray and Hoy) or local parishes. While an individual who fishes from Westray can be categorised as an Orcadian fisherman, or even a Scottish fisherman, it becomes clear through the interviews with individuals that these finer distinctions make up a core part of their individual identity, and this report strives to reflect that.

4.6. Cultural Services

An Ecosystem-based Approach (EBA) is an integrated approach to the management of natural resources, that considers both natural and social systems, while the concept of ecosystem services is focused on understanding and valuing the benefits humans receive from the natural environment (Acott and Urquhart, 2017). The different benefits that people can derive from the ecosystems around them can be broken down into three categories (Acott and Urquhart, 2017):

1. Provisioning services
2. Regulating services
3. Cultural services

The first category, provisioning services, can be seen as encompassing material services that meet our immediate needs of survival, including food, water, shelter, and energy. The other two categories are intangible, with regulating services including climate control and waste management. Cultural services include recreational, spiritual, and aesthetic benefits derived from the environment (Acott and Urquhart, 2017). Ecosystem-based approaches are becoming increasingly mainstream and are used

in a variety of resource-management systems and decision-making processes (including marine planning).

Ecosystem services rely on human activity to transform the natural environment, which in turn ultimately imbues a natural resource with a socio-cultural value (Acott and Urquhart, 2017). Fishing is one such activity, and it provides a range of ecosystem services including: providing a cultural identity for those who fish, or live in a place associated with fishing, providing meaning to a place, providing a basis for shared heritage and memory, providing an environmental connection, and the creation of environmental knowledge

4.7. Social Wellbeing

Social wellbeing stems from the idea that human wellbeing and the environment are linked- the environment provides a range of ecosystem services, which influences an individual's perception of 'living well'. Social wellbeing can be viewed as a state in which human needs are met, where individuals and groups are satisfied overall with their quality of life and are able to act in a meaningful way that enables them to pursue their goals (Johnson, 2017 A, Armitage et. al., 2012; Breslow et. al., 2016). The social wellbeing framework used throughout this report is based on the work of presented in *Social Wellbeing and the Values of Small-scale Fisheries* by Johnson, Acott et. al. (Johnson, 2017 B), as it is a tool allowing the identification of the economic, social, and cultural importance of small sale fisheries (Acott and Urquhart, 2017).

When used as a valuation system, social wellbeing is seen as something that is not only derived from ecosystem services, but is a driver for individuals, communities, and societies, to act with regard to the environment (Acott and Urquhart, 2017). This allows us to use the concept of social wellbeing as a framework that enables us to assess and evaluate motivators of human action within specific contexts. Because of this, social-wellbeing frameworks are often use concepts such as place (see section 4.5) to explore social and cultural values within a community (Acott and Urquhart, 2017).

Wellbeing can be divided into objective, subjective, and relational dimensions (table 1 in section 3.1), with the objective dimension referring to the assets and resources that relate to an individual's living standards (e.g. income, educational level, and health¹), while the subjective dimension refers to personal evaluations on how the individual themselves is doing and includes notions of self. The third dimension focuses on networks, e.g. an individual's relationships with others (Johnson, 2017 A; Acott

¹ It is worth noting that the objective dimension of social wellbeing encompasses is the same as the provisioning services of EBAs and ecosystem services.

and Urquhart, 2017). These dimensions are applicable whether applied to a household scale, a community, or an entire human-ecological system (Acott and Urquhart, 2017).

5. An Introduction to Orkney's Fishing Industry

Orkney's fishing industry consists approximately 111 vessels, the majority of which are under 10m. This fleet composition means Orkney's fishing industry can be described as 'inshore', with the major fisheries centred around brown crab, velvet crab, and king scallops. Other important commercial species include queen scallops, lobsters, prawns, and whelks. The fleet is responsible for the 297.37 full-time-equivalent positions, with landings in 2015 valued at £6,264,459 (Seafish, 2017).

The GVA (Gross Value Added) for each vessel in Orkney averaged £67,600 (£333,500 for demersal vessels and £56,500 for pot and trap vessels) between 2008-2016. The average total income for an Orkney fishing vessel is £165,000 per year for the same period (£904,000 for demersal vessels and £115,000 for pot and trap vessels).

There are two crab processing factories in Orkney, one located in Stromness and one on Westray. These processors act as buyers of brown crab, velvet crab, and lobster. In addition to these processors, a number of smaller buyers operate within Orkney.

6. The Culture of Orkney's Fishing Industry

Orkney's fishing community is multifaceted and dynamic, responding to internal and external forces. The community (and its identity and culture) is created and maintained through repeated interactions of individuals and relies heavily on shared experiences and a shared understanding of the value of natural resources (Acott and Urquhart, 2017). As the value of these resources change, so do relationships in the fishing industry.

Traditionally relationships in Orkney's fishing industry were based upon interactions at sea and in harbours but advances in technology in the form of Facebook and WhatsApp have allowed social networks to expand beyond traditional geographic boundaries and allow for improved co-ordination and co-operation within the industry (enhancing both the bonding and linking social capital within the industry) (Williams, 2008; Bakker, 2016). Relationships within Orkney's fishing industry serve an important function and underpin recruitment, innovation, and resilience within the industry (Jones, 2013). Social connections and reciprocal interactions (both at sea and on land) promote the creation

of trust and high levels of social capital which may be used by the industry to create and mobilise community assets (see section 6.1).

Within Orkney, relationships within the fishing industry are largely place-based, with skippers and crew building relationships with those they work closest to through repeated harbour-side interactions. In these cases, piers acted as a natural meeting point, facilitating conversations and promoting the exchange of knowledge and ideas. One fisher talks about his local harbour:

Well, generally speaking it's actually pretty good, where I work everybody sort of speaks back and forth, quite courteous and helpful [...]. Ehh, just now it's quite an obliging bunch of guys out there. They'll shift out your road and all the rest of it. And speak [to you about the fishing]

Changes in the fishing industry (from internal and external factors) alters the relationships between individuals within the industry. As competition for space in the surrounding waters increases, relationships within the fishing industry are vulnerable to deterioration. While competition is always present in the industry to some extent a growing sense of individualism has threatened traditional social orders (Bakker, 2016). One fisher describes the situation:

Long ago everybody was doing very well.... Everyone yarned on the pier but now you ken, you struggle to get a wave to one another [...] the communication, that's all gone. [Its] been gone for years. They're all struggling.... Struggling to survive in something they love. Ken the passion for the way of life, and it's just disappearing, slowly disappearing...

Competition is a natural component of the fishing sector and traditionally fishers have used shared understanding of the industry and its demands to create internal solidarity in the face of commercial competitiveness (Williams, 2008; Bakker, 2016). Social networks can be used to create community assets in the form of infrastructure, trade bodies, and research organisations- examples of how bonding social capital can be used to build community agency (Bakker, 2016). Bonding social capital encourages trust between individuals, which in turn promotes a willingness of individuals to participate in and contribute to community activities (sometimes even persuading individuals to prioritise communal interests over their own personal goals and desires) and is vital for community resilience and transformability.

6.1. The Culture of Co-operation and the Creation of Community Assets

The high level of social capital within Orkney's fishing industry is reflected in the variety of community assets², which include on-shore businesses (such as the two crab processing facilities and Orkney Marine Oil), facilities (such as the freezer in Stronsay and the storage shed in Kirkwall), trade organisations and research groups (e.g. Orkney Fisheries Association and Orkney Sustainable Fisheries). As well as being expressions of the fishing industry's bonding social capital these assets have added value to the industry as well as the wider community, by helping fishers increase the value of their catch (Stronsay freezer), providing employment opportunities (the two processors) and improving harbour infrastructure (Orkney Marine Oil, Kirkwall storage shed). Additionally, these assets allow the industry to formally represent themselves in local and national decision-making processes. Organisations such as Orkney Fisheries Association and Orkney Sustainable Fisheries are able to draw upon their research experience and expertise as well as their connections with national and international research institutes to inform and legitimise the experiences and knowledge of the fishing industry.

Tracking the individuals participating within these organisations reveals the high level of connections within the industry. Figure 2 displays the relationships between individuals (grey nodes) with different community assets (red nodes), revealing that many individuals are involved in the management of multiple assets.

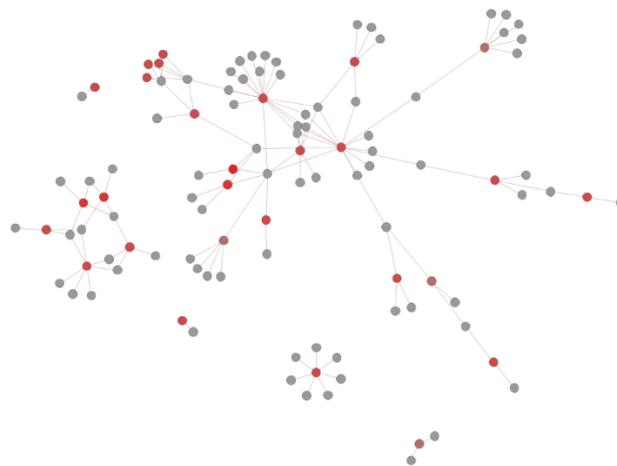


Figure 2:- The relationships and connections between individuals (grey nodes) and community assets (red nodes) in Orkney's fishing industry.

² Defined as "the resources which are available within a community, which can be identified and mobilised to engage with or induce change to drive development and strengthen resilience" (Bebbington, 1999, Magis, 2010, and Mathie and Cunningham, 2005 in Bakker, 2016)

7. Orcadian Culture and the Role of the Fishing Industry

The behaviour of fishers influences the wider community of which they are a part, contributing to food security, employment, and supporting social and economic diversity within an area (Griffith and Dyer, 1996). Traditionally community dependence on fishing was measured using economic parameters, ignoring the function of the industry as a cultural driver of socio-cultural/ecological transformations (Jones, 2013; Acott and Urquhart, 2017)

Orkney's fishing industry makes up 11.8% of Orkneys GVA, but despite this its cultural footprint is relatively small, especially when compared with other industries such as farming and -recently-renewable energy and tourism (Cogentsi, 2012). The relationship Orkney has with fishing, and how this differs from other sea-based communities around Scotland can be summed up by the phrase "*an Orcadian is a crofter with a boat, while a Shetlander is a fisherman with a croft*". This saying, which was encountered frequently when discussing the interaction of the local fishing industry with the local community, reflects the relative position of the industry in Orkney compared with other industries and other coastal communities.

The disconnect between the community and the industry can be partly attributed to the unseen nature of the industry, with the majority of fishing activities occurring at sea, away from the general public. Harbours, nousts, wholesalers and processors are the most visible symbols of the industry despite the expansion of other maritime industries and closure of many island processing plants. In interviews, many fishers acknowledged that their 'hidden' activities impacted how their industry is perceived by the wider community:

Fishing's an unseen industry. Can't see it going on. [People] come down the harbour on a nice day, and they see no boats, cause they're all out at sea. And you can't actually see fishermen working, because they're all out at sea. So.... their views on fishermen and fishing... it's never really held very high with them. If it was an industry going on right at the pier there would be more made of it.

This lack of awareness of fishing is expressed in other ways, such as the absence of a local 'brand' for the industry. Orkney's fishing industry has largely failed to capitalise on its products (with the one exception of 'Orkney/Westray Crab'). Orkney's seafood products are of a high-quality with a strong potential for brand and product development, increasing both local and national demand (Orkney LEADER, 2017).

The low profile of Orkney's fishing industry in the wider community consciousness can also be attributed to a decrease in the number of direct connections of the community with the industry. As the number of alternative occupations within Orkney increases, fewer young people are choosing to enter the industry, instead seeking work with more financial stability and a better work-life balance (see *The Continuity of Orkney's Fishing Industry*). This shift away from viewing fishing as a viable occupation has resulted in the community perception that fishing as an industry is 'dirty', associated with hard labour and low pay. These impressions create a stigma around the industry, further discouraging individuals to enter, and increasing the reliance of the fleet on foreign workers. An increase in the number of foreign workers within the fishing industry (both through direct employment on vessels and downstream employment through processors) has weakened the connection between the industry and the wider community as community dependence on fishing decreases (Williams, 2008; Jones, 2013).

"How do you think the local community in Orkney views fishing?" Ken, Orkney's more looked at as a farming community. Ken you've never- the tourists seem very interested. Ken when you're landing they'll run over and ehh- well, no run over, but they'll take an interest in what you're doing and go and ask you questions and- you'd never see a local doing that....

Not only does an influx of foreign workers loosen a community's economic dependence on the fleet, but it ultimately erodes the collective identity founded in the industry. Individuals within the community are no longer able to relate to the industry through the lens of their social or familial connections, instead viewing the industry and those working in it as 'other' (Williams, 2008). It is through these processes that the communal identity of a 'fishing community' breaks down, with fishermen and the industry struggling to connect their individual identity to their wider community, opening the door for conflict, misunderstandings, and further alienation. The belief of individual fishers that they are unwelcome underdogs within their community is relatively common. One fisher says:

I don't think they [local decision-makers] think very much of it. I think they would rather if they weren't here. That's the kind of opinion I get.

This apparent lack of understanding between fishers and their wider community can be seen as stemming from a clash of identities and has implications for the future management of the local fisheries and other marine resources (see section 9).

7.1. Online Communities

Technology has created new spaces for dialogue and relationships to form between the fishing industry and wider Orcadian community. Facebook pages celebrating Orkney's heritage as well as those dedicated to its present activities allow both active fishers and those with no connection to the industry to follow the news and activities of the local fleet, helping the industry to create both bonding and bridging social capital. Such online communities create connections between fishers and non-fishers, providing a public forum for dialogue which may not occur otherwise. These communities allow individuals to share memories of the industry through historic photos of boats, harbours, and individuals, and follow the process of newer vessels entering the fleet, such as the *Keila*.

These online communities are playing an increasingly important role to how the wider Orcadian community relates to the local fishing industry, as well as informing how the industry views itself and its context within Orkney. Online platforms have the potential to allow the fishing industry to enhance its linking social capital and make connections with the wider Orcadian community, which may help the industry address its continuity issues (see report *The Continuity of Orkney's Fishing Industry*). Similarly, these modern tools may also allow the industry to engage across scales, collaborating with decision makers, policy-makers, and research institutions.

Online platforms have been embraced by both Orkney Sustainable Fisheries and Orkney Fisheries Association to expand their social networks and build relationships with similar institutions and organisations, facilitating collaboration and knowledge sharing.

8. The Role of the Fishing Industry in Bonding Social Capital and Community Wellbeing

Collective memories and shared experiences of the fishing industry not only help form and maintain communities but can actively be used to promote community wellbeing, especially in older generations. The past can be utilised as a tool to strengthen community ties, providing a connection between individuals and groups helping them make sense of their present and the future, and improving their sense of wellbeing (Williams, 2008; REEF 90).

Reminiscing plays an important function in the mental health and wellbeing of older people, allowing them to interpret their life journey in a process of discovery and re-discovery- either as individuals or a group. As well as an everyday activity, reminiscence can also be used as an enrichment tool to encourage personal growth and reduce psychological stress, improve quality of life and allow individuals to create links between themselves, their values, and the community (Age UK, 2018).

Retired fishers often experience a loss of identity upon their exit from the fishing industry and can struggle to adjust to 'normal' life (Williams, 2008). Upon leaving the industry a skipper no longer has access to their pier-side networks and this loss, alongside the loss of individual identity can have harmful effects on individuals, manifesting as poor mental and physical health. Exercises such as reminiscing may play an important role in supporting fishers through their retirement (Age UK, 2018). Additionally, as the fishing industry often has strong connections to a place, it can be used symbolically to facilitate collective reminiscence and improve community wellbeing (Williams, 2008). An example of this is the *Memories of the Fishing* project run by Kalisgarth Care Home in Westray, which encouraged residents to share their experiences and memories with each other and the wider community (see figure 3).

Thus, we can see reminiscing has two-fold benefits: enabling individuals to adjust to their new circumstances and improve their mental wellbeing, as well as acting as a vehicle for wider community cohesion by facilitating conversation and connections.



Figure 3:- Recollections of the fishing industry from residents at Kalisgarth Care Home, Westray. Reminiscing plays an important role in facilitating individual and community wellbeing and can help retired fishers adjust to life on shore.

9. The Role of the Fishing Industry in Resource Management

Participation (defined as a capacity-building exercise that allows stakeholders to act as agents of change) benefits decision-making processes by encouraging resource mobilisation and knowledge exchange, helping to create a shared discourse and understanding of the subject and processes of governance (Bakker, 2016). Local and national governance processes, such as the creation of Orkney's

Marine Spatial Plan or the designation of marine protected areas benefit from stakeholder input and often build engagement initiatives into the process. Despite this, however, engagement with the fishing industry is low, with fishers often feeling that engagement processes are a purely symbolic function, and that they have little ability to influence the decision-making process (Bakker, 2016).

Like many other fishing industries, Orkney's industry can be classified as a 'defended community', with local fishers feeling alienated from wider society and under attack from the actions of local and national decision-makers (Reed et. al., 2011) (see section 10). Such an identity hinders the ability to meaningfully engage with management processes and restricts the ability of the industry to build linking social capital. Fishers feel local and national decision-makers have little to no understanding of their industry and way of life, and that their goals are fundamentally incompatible with the wants and needs of the fishing industry (Bakker, 2016). One fisher explains:

.... When you invest in the fishing industry, it's quite a long-term investment. A councillor and an MP they're only elected for a term of four years, so they're looking for short term things to make them look good. The fishing's never a thing they're ever [going to] pick up. It's always a long-term investment. ...Lobster fishing especially. It's 9 year for a lobster in the hatchery to actually land on your plate. Its longer term than a political term, so the fishing industry never really gets picked up on very well at all.

This mistrust is further amplified by previous experiences with governance and decision-making processes which fishers have viewed negatively (Bakker, 2016). Such instances fuel the narrative that has become common within the industry: that decision-makers wish to see the fishing industry replaced by alternative, high profile, marine industries such as renewable energy, aquaculture, and tourism. One fisher says:

[Councillors have] no interest in [fishing]. As far as I can see, they're no interested in us. We're just a bloody nuisance, I think. That's the way they look at it, no doubt. So I don't ken what will happen in the future, but I think [we will] be pushed out at some point.

Overcoming these barriers to engagement is vital for the fishing industry to increase its linking social capital and have the opportunity to mobilize its resources. While individual fisher participation in decision-making processes remains low, industry organisations such as Orkney Sustainable Fisheries and Orkney Fisheries Association are able to act as a link between the two (Bakker, 2016).

10. Linking Social Capital and Orkney's Fishing Industry

Community assets such as Orkney Fisheries Association and Orkney Sustainable Fisheries can be viewed as expressions of linking social capital, facilitating connections and co-operation between the fishing industry and decision and policy makers.

Orkney Fisheries Association provides the industry with formal representation on a local and national level in management and governance processes (Bakker, 2016). It provides a central point of contact for both fishers and decision-makers allowing the dissemination of knowledge while helping create transparency and trust within the industry (Bakker, 2016). Orkney Fisheries Association is both a product and a driver of fisher social capital. It has been integral in improving infrastructure such as the bait and catch storage freezer in Stronsay and the storage unit on Kirkwall Pier, as well as facilitating initiatives such as Orkney Marine Oil which provides fishers with a cheaper source of fuel, and research projects through Orkney Sustainable Fisheries (Bakker, 2016).

Orkney Sustainable Fisheries is another expression of the fishing industry's social capital and plays an important role in fishers' ability to engage with fisheries management. OSF allows the industry to engage in scientific processes, helping create and disseminate knowledge (often in collaboration with other institutions and research organisations) (Bakker, 2016). Yannick Bakker (2017) identified the two-fold benefit of fisher-scientist relationships: 1) the contribution of fisheries science to social and natural capital through encouraging sustainable fishing practices and supporting healthy ecosystems and fish/shellfish stocks, and 2) contributing to the political capital of the industry through fisheries improvement projects and informing and legitimising decision-making in fisheries management and marine governance. Both benefits of the role of science in the industry have the indirect benefit of improving economic capital in the industry (Bakker, 2016).

Engagement with scientific processes has provided fishers with insight of the data requirements underpinning resource management decisions and has fostered the development of collaboration and co-operation with managers and decision-makers. Research carried out by OSF (and OFA) is largely fisher-driven which has given fishers confidence in their ability to represent themselves and their industry in management processes. One fisher describes how they feel fisher science can be used to inform decision-making processes and marine policies to benefit all parties:

...I think [decision-makers] need to understand the benefits of it environmentally, socially and economically a bit better. And if we can get data [from] here and the stuff that [our researchers are] doing... we can say "this is what's happening" "this is what it's worth" "this is what we're doing" that's what [decision-makers] need to see. That's what they want. And that's what we don't have

Collaboration with scientists benefits decision-making processes, providing a neutral and impartial method of communication between fishers and decision-makers, increasing fishers' trust in the decision-making process and in science itself. One fisher describes the change:

[I think one of the biggest changes has been] in management... science. The first I remember the science that was done ehh... a lot of it [wasn't] trusted, and there was no input from fishermen at all. Nothing. And like, that's the reason it wasnae trusted. And everything that was done was usually used against fishermen. So, all the projects that's gotten off the ground here in Orkney, and... speaking to fishermen is a great thing.

11. Value-Contribution Matrix for Orkney's Fishing Industry

The fishing industry influences and is influenced by the wider Orcadian community. These relationships and influences act across different scales and can be mapped using a value-contribution matrix. Table 2 summarises the values of Orkney's fishing industry and how these values are expressed at different scales. The importance of the industry to individual fishers is represented both through their economic connection to the industry but also in how they base their identities and relationships around their livelihoods.

	Fishers	Community	Society
Objective	-Source of income for over 100 fishers (+) -Low market price means some fishers struggling to survive (-)	-Employment opportunities in upstream and downstream industries including employment opportunities in more remote island areas (+) -Difficult for individuals to enter the industry due to high levels of competition (-)	-Orkney is a major supplier of brown crab meat to national super market chains (+)

<p style="text-align: center;">Subjective</p>	<p>-Fishers fear for the future of the industry as concerned about current levels of fishing effort (-) and lack of interest in fishing from the next generation (-)</p> <p>-Fishers enjoy their work and feel strong level of satisfaction from their activity and pride in their product (+)</p>	<p>-Fisher equipment and gear on the harbour side considered to be an 'eyesore' by some (-)</p> <p>-Shared memories of fishing important for community bonding and identity (+)</p>	<p>-Orkney seafood valued by consumers as being high quality (+)</p>
<p style="text-align: center;">Relational</p>	<p>-High level of co-operation within the industry allows community assets to be created (+)</p> <p>-Trust and relationships in the fishing industry under pressure from poor market conditions and increased competition between individuals (-)</p> <p>-Fishers may feel isolated and suffer from poor mental health (-)</p>	<p>-Collection and formalisation of fisher knowledge (+) through Orkney Fisheries Association and Orkney Sustainable Fisheries</p> <p>-Fishers perceive themselves as isolated from wider community (-)</p>	<p>-Industry has little social recognition in Orcadian community (-) but fishers hope to improve the local perception of their industry through linking social capital (+)</p> <p>-Recognition of importance of industry in more remote areas such as the north isles (+)</p>

Table 2:- Value contribution matrix for Orkney's fishing industry.

12. Conclusion

Orkney's fishing industry can be described as a 'defended' community which has low levels of trust in decision-makers and decision-making processes. However, the industry has high levels of bonding and bridging social capital, which it has been able to use to create community assets to improve its ability to engage across scales. New technology has improved communication and allowed the industry to engage with the wider community which has somewhat helped decrease the 'hidden' nature of the industry. While the relationships within Orkney's fishing industry are relatively robust, stagnant market prices and restrictive management legislation has increased competition within the fleet and may potentially harm the industry's ability to collaborate.

Although Orkney's industry occupies a relatively small position in Orkney's cultural consciousness when compared to industries such as agriculture and tourism, it plays a vital role in community cohesion and individual wellbeing. Shared memories of the fishing industry have been used as tools by local care homes to improve quality of life for residents.

The variety of community assets created by the fishing industry, such as research projects, trade bodies, and harbour infrastructure, is enabling fishers to become more organised and increasing the resilience of the fishing community to changes. Strong fisheries management is reliant on fisher co-operation and collaboration and will benefit from continued community organisation.

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