

SOCIAL CAPITAL AND FISHERIES PARTICIPATION IN MARINE SPATIAL PLANNING IN ORKNEY, SCOTLAND



MSC THESIS | YANICK BAKKER

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ABSTRACT

Marine developments are projected to increase user-user and user-environment conflict in the Pentland Firth and Orkney Waters in Scotland. To minimize conflicts and ensure sustainable blue growth, Marine Scotland, the Orkney Island Council and Highlands Council have set-up a working group to develop a pilot marine spatial plan, to test this new tool for marine governance. As fishermen are directly dependent on access to marine resources for their livelihoods, they are key stakeholders in negotiations about development of marine space. This research set out to investigate the ways in which the inshore shellfish fisher community of Orkney relates to marine space and marine spatial planning, and how they use community assets to influence marine developments in favor of the community. Specifically, this research had focused on the relation between community social capital, in the form of bonding, bridging and linking, and community resilience to engage with and influence marine spatial planning. Although different forms of social capital are present within the inshore shellfish fisher community, and the community displays resilience by mobilizing these assets to work towards community objectives, linking social capital has shown to be weak. Although there is social organization among fishermen which opens up pathways for participation, the fisher community has lacked agency to gain access to power in governance negotiations.

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LIST OF ABBREVIATIONS

MS	-	Marine Scotland
MSP	-	Marine Spatial Planning
MMO	-	Marine Management Organization
OFA	-	Orkney Fisheries Association
OFS	-	Orkney Fishermen's Society
OIC	-	Orkney Island Council
OSF	-	Orkney Sustainable Fisheries
PFOW	-	Pentland Firth and Orkney Waters
SFF	-	Scotland Fishermen's Federation

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1. INTRODUCTION

Looking at the waters surrounding the Orkney Islands – the Pentland Firth, Scapa Flow, Stronsay Firth, Westray Firth, Deer Sounds, Rousay Sound - as a tourist, I see one of Orkney's cherished assets; a wide view of the open seas. It is difficult to image there could be competition over space when all you see is water as far as the eye can reach, with some scattered pieces of land in the far distance. During my stay in Orkney, I have made many walks over the islands, past historic sides, over beaches and across the cliffs of Mainland, Hoy and Westray. On beautiful days, I would sight some of the small fishing vessels that operate in the inshore waters, sometimes I would see a ferry or even a large cargo ship heading for the Mainland of Scotland. But more often than not, I would be alone and the seas seemed to belong to the razorbills, the gannets, the fulmars and the seals. But ask a fishermen about the Orkney Waters, and you will hear a different story. They will talk about the tides, about the migratory habits of shellfish species, about creels and catches. When they look at the seas, they see the life at the bottom of the ocean. Life that remains largely hidden for most of us, until it shows up on our plates. When they talk about the sea, they do not see the empty space that speaks to my imagination, they see an occupation, a way of life and an uncertain future.

For this thesis, I have delved into the world of marine spatial planning; a tool for marine governance designed to govern the use of marine space to minimize user-user and user-environment conflicts. As key stakeholders in the marine environment, I was curious to see how fishermen relate to this new way of looking at and giving direction to the development of marine space.



Fishing vessel in the Westray Firth, Westray, Orkney

1.1 COMPETITION OVER THE PENTLAND FIRTH AND ORKNEY WATERS

In 2010, there was a stir in the Orkney Waters and the Pentland Firth as the front page of the *Orcadian* of March 18th headlined: "The dawn of a new era. 'Historic' marine renewables announcement could herald the 'greatest economic benefit to Orkney since the birth of the oil industry'". The Pentland Firth – a 13km wide strait between the Orkney Islands and the Scottish mainland - is known for its strong and at times dangerous tidal currents, but is nonetheless an important passage for cargo vessels traveling from the East of Scotland to the Atlantic Ocean or from the West of Scotland to the North Sea. Furthermore, the strait provides daily passage for people, livestock and products to and from the Orkney Islands and the islands beyond. The notorious tides of the Pentland Firth and Orkney Waters, however, also make it an attractive area for marine renewable energy development (Marine Scotland, 2015). In light of the global concerns for climate change and the finite fossil fuel resources available, the Scottish national government has set targets for renewable energy generation in which marine renewables are promoted to play a significant role (Defra, 2005; Scarff, Fitzsimmons, & Gray, 2015). The combination of tidal and wave energy off the coasts of Orkney and the North-East coast of Scotland has been projected to generate 1.6GW of marine energy, which could supply approximately 750.000 households (Department of Energy & Climate Change, 2012). In 2010, the Pentland Firth thus became the first UK site for commercial marine energy production.

The leasing of sea beds for marine renewables has been a development that has stirred both excitement and concern from a wide range of stakeholders around Orkney, bordering anger and disbelief among some. The realization that new marine developments are looking to take root in Scottish national waters (leading to the partial allocation of marine space) and need to be balanced with existing marine users that lay claim to the 'open space' of these seas, however, also created an opportunity. An opportunity to trial a new way of looking at and giving direction to marine development (JG, October, 2016). To ensure the sustainable exploitation of the marine environment and to balance the diversity of interests in the marine space, the Orkney Island Council, Highlands Council and Marine Scotland have developed a pilot Marine Spatial Plan for the Pentland Firth and Orkney Waters (PFOW). This pilot plan will inform future marine planning around the Highlands and Orkney Islands (Pilot PFOW Working Group, 2016).



Headline of Orcadian, March 18th, 2010

As the waters in which they fish and the fish stocks they target are central resources for fisher communities, access to these resources is vital for their survival (Grafton, 2005). Not only do new marine development create concerns for sustainability, the notion of spatial planning at sea also causes concern for decreased mobility and consumption of space (Symes, 2005). As fishing is an inherently dynamic practice and fishermen require flexibility and mobility to deal with occupational risks and uncertainty (Zervaki, 2015), the allocation of and potential exclusion from marine space seems to pose a threat to fisheries' resilience (Ross, 2015). Furthermore, as Jentoft and Knol (2014) and Symes (2005), warn fishermen are, despite their high interests in marine developments, at risk of becoming the weaker party in marine spatial planning negotiations, due to their social, economic and political position. Fisheries' engagement with marine spatial planning could, however, also provide an opportunity for fisheries to reduce their vulnerability in the face of conflict and uncertainty regarding marine developments (Symes, 2005).

1.2 FISHERIES AT RISK

Island life is inherently related to the sea. Throughout Orkney's history, the strict marine boundaries of the islands and the resources from the sea have defined its cultural and economic development. Today, the marine areas around Orkney still support diverse economic activities and livelihoods of island residents, for instance in the fishing sector, tourism, energy, transportation and recreation. Ensuring continued high quality of Orkney's marine environment is therefore a matter of economic, environmental and socio-cultural concern (Marine Scotland, 2015; Orkney Islands Council, 2013b). Current and future marine developments are projected to expand the range of marine users and intensify existing marine activities (Defra, 2005; Jay, 2010; Tyldesley, 2004). As a result there could be an increase in user-user conflicts, in which users compete over space, and user-environment conflicts, in which the cumulative impact of marine use has adverse implications for the marine environment (Douvere & Ehler, 2009). For the Orcadian fisher sector, the stakes in marine developments are high. Fishermen are directly dependent on high quality marine ecosystems and access to high quality and quantity fish stocks, fishing grounds, sailing routes, harbors and markets.

Taking a community resilience perspective, this research is set-up to gain a better understanding of the ways in which fishermen deal with the posed threat of competition over marine space and the way they engage opportunities to address this threat through participatory marine spatial planning negotiations. Community resilience is about the ability of communities to thrive under circumstances of change, using different resources available within the community (Mathie & Cunningham, 2005). The introduction of marine spatial planning for the Pentland Firth and Orkney Waters are taken as a case study to represent change in the governance structure and policies that shape the development of marine space.

In 2014, the UK Marine Management Organization (MMO) published a report on the potential social impacts of interactions between different marine sectors, in support of marine planning. This report concluded that commercial fisheries have a significant impact on social wellbeing through their contribution to sense of individual and community identity, belonging and way of life. The report identified several interactions between fisheries and other marine sectors, which may have adverse implications for fisheries (MMO, 2014). Competition over marine space may lead to exclusion or displacement at sea or in harbors. In response, fishermen may target alternative fishing spots with consequent impacts on ecosystems and fish stocks. Displacement from safety zones and sheltered routes may increase risks for vessels, gear and crew. Fishermen may change their fishing routes, which has implications for time and capital

investments, catches and profitability. These economic consequences may force fishermen to diversify their practices and income. Furthermore, as the overall marine economy diversifies, the character of coastal settlements, landscapes and island identities may change. Adjustments in working and employment patterns can change the structure and character of a fisher community. Increasing competition among fishermen may decrease community cohesion, trust and sense of identity. As such, increasing social and economic pressures impact the fishermen's way of life and social wellbeing. There are, however, also potential positive outcomes of interactions. Exclusion or displacement from fishing grounds may allow ecosystems to restore in those places, which can have long term benefits for fish stocks and habitats. The diversification of the island economy creates economic opportunities and could for instance lead to investments in harbor facilities. Although the report emphasizes that these are *potential* consequences of interactions, the reality of which will depend on regional factors, the impacts on way of life are associated with multiple forms of user-user interactions and are thus very likely to occur (MMO, 2014).

1.3 GOVERNANCE OF MARINE SPACE: CONTESTATION AND COMPLEXITY

Increasing competition over marine space creates a growing pressure on both marine resources and marine governance. A common critique on marine governance is that marine planning and management tools and processes have been activity- or sectoral-based, which has led to fragmented decision-making and regulation. Marine spatial planning should create an opportunity for a more organized and coherent governance response to these developments through a holistic ecosystem-based approach (Jay, 2010; Scarff et al., 2015; Sutherland & Nichols, 2006; Tyldesley, 2004). This is the so-called 'spatial turn' in marine governance; marine management moves away from activity-based organization towards area- or ecosystem-based development (Jay, 2010).

The notion of spatial planning in marine areas is, however, not a straight-forward idea and faces several challenges regarding the characteristics of marine space. One challenge is that the marine space is an ambiguous legal space (Ehler & Douvere, 2007). For European coastal states, the statutory planning authority usually ends at the low water mark. United Nations maritime legislation assigns nations' sovereignty up to 12nm into the territorial waters, which creates opportunities for marine planning. Ambiguity in jurisdictional and administrative marine boundaries, however, continue to exist (Jay, 2010; Sutherland & Nichols, 2006). This is caused by the transboundary character of marine ecosystems, which are often subject to multiple user claims. These claims are three-dimensional and temporal in kind (see *figure 1*). Activities can take place on the surface (e.g. wave energy and transport), in the water column (e.g. fishing or diving) or on the seabed (e.g. oil extraction) - sometimes simultaneously - and can be flexible over time. The general lack of exclusive private ownership over marine areas further hampers traditional land-based planning practices, such as parceling (Sutherland & Nichols, 2006; Symes, 2005; Tyldesley, 2004) This leads to complexity in governance of many inshore waters, and even more so in international waters which are capitalized by multiple sovereignties (van Tatenhove, 2013).

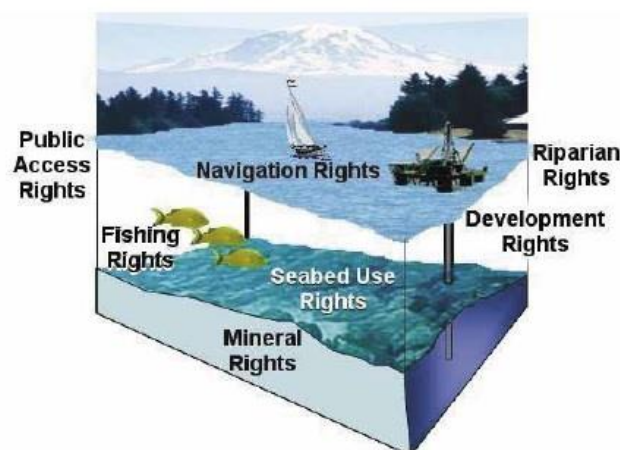


Figure 1 Three-dimensional marine space

Source: Sutherland & Nichols (2006) p.12

Marine spatial planning is thus positioned within a wider (inter)national marine governance context and is influenced by formal international rules and EU regulations, regional conventions and sectoral marine policies (Defra, 2005). Furthermore, the development of a marine spatial plan is the outcome of negotiations between representatives (or agents) from civil society, government and market parties involved in maritime activities in the designated ecosystem area (van Tatenhove, 2011). There is thus plurality in marine governance; which refers to the plurality of actors involved across levels, the plurality of institutions on which marine governance arrangements are grounded and the plurality of marine uses to be governed. These pluralities indicate the complexity of arenas in which agency is exercised to influence marine governance processes (Cleaver, 2007). In order to develop workable policies for these spatial and institutional complexities, cross-scale negotiations among different stakeholders are essential (Jentoft & Knol, 2014).

1.4 LEGITIMATE MARINE SPATIAL PLANNING AND SOCIAL CAPITAL

To ensure legitimate and effective marine governance, stakeholder engagement must be ensured from the onset to support and inform the MSP process (Defra, 2005; Ehler & Douvere, 2007; van Tatenhove, 2011). The European Commission's guiding principles for marine spatial planning include stakeholder participation throughout the MSP process. Through participation, stakeholders should be included in identifying key issues, participation should enhance ownership and should allow stakeholders to share knowledge and information (Flannery & Cinnéide, 2012; Jay, 2010). Participation in general can be defined as the involvement of stakeholders in politics and planning (van Tatenhove, 2011). There are different degrees of participation (see Table 1). Informing refers to one-directional information sharing from the policy-makers to the public. Consultation refers to the two-directional sharing of information, by which the public may respond to policy proposals. Through this form of participation, stakeholders can voice their opinion, but influence on decision-making is not guaranteed (Pita, Pierce, & Theodossiou, 2010). With public participation there is public engagement with the policy process. This engagement refers to the involvement of stakeholders in agenda-setting, decision-making and policy-formation (Zervaki, 2015).

Table 1 Different types of participation in governance

Public participation	Engagement: the involvement of stakeholders in agenda-setting, decision-making, policy-formation
Consultation	Two-directional; public feedback on proposals
Inform	One-directional from policy-makers to public

On the one hand, public participation thus depends on governance structures and opportunities for public involvement. On the other hand, the ability of stakeholders to participate depends on power relations between different stakeholders, stakeholders' access to resources and capacity to engage these resources (van Tatenhove, 2013). In other words, the ability of stakeholders to participate in governance processes is in part influenced by their social capital (Grafton, 2005; Nenadovic & Epstein, 2016). Social capital refers to practices, norms and values present within a social network (or community) which can contribute to the collaboration, functioning and collective action of that community. Social capital exists in many different forms and can be more or less present within a community (Lehtonen, 2004; Rydin & Holman, 2004). Through agency, community-members can use their social capital to engage with governance processes (Bebbington, 1999). As Smith (2015) argues, the introduction of marine spatial planning means there will be changes in the governance framework which defines the rules of the game for marine development. As such, stakeholders (re-)position themselves in this new arena of marine governance and adopt new roles in governance negotiations. In the context of marine spatial planning, fisheries can employ their social capital to engage with the MSP process to induce change in favor of the community (Grafton, 2005).

Although there is a large body of literature on the role of social capital in fisheries management, there seems to be a gap in knowledge on the role of social capital in a marine governance context. What is lacking, is an understanding of the functioning of social capital (Nenadovic & Epstein, 2016; Rutten, Westlund, & Boekema, 2010). Research into social capital in this marine governance context could provide insight into the ways in which fishermen engage with market, state and civil society actors to strengthen their position in negotiations over access to resources (Bebbington, 1999).

1.5 FISHERIES' COMMUNITY SOCIAL CAPITAL AND MARINE SPATIAL PLANNING

Fishing has been described as a 'maritime' occupation around which people build their entire lives thereby forming close-knit communities with shared values and an ability to make decisions collectively rather than individually (Ross, 2013, p. 56).

Reciprocal social ties in fisher communities help strengthen the sense of belonging and are an important source of support. For the fishing industry, which copes with constant uncertainty and risks, social networks can thus serve as a collective coping strategy (Symes & Phillipson, 2009; Urquhart, Acott, Reed, & Courtney, 2011). This is one example of the multiple functions or functional externalities communities can have. Social security, dissemination and distribution of knowledge, collective social and political representation and self-confirmation are all examples of outcomes or consequences of the social capital created within a community (Bærenholdt & Aarsæther, 2002). However, resilient communities need more than social capital in the form of strong connections within the community. By connecting to external communities and actors, community members can expand their knowledge base, mobilize external resources and create opportunities to respond to and cope with external threats to the community (Grafton, 2005). Resilient communities are thus able to strategically use their social networks to gain access to resources beyond the community. For fisher communities this means using different forms of social capital to gain power in governance negotiation, and exercise influence in favor of community objectives (Grafton, 2005).

Initial responses to the leasing of Orcadian sea beds for marine renewable energy development were, as I mentioned, diverse. While some Orcadians were optimistic about the potential environmental benefits, excited about the buzz of technological innovation or the promise of large economic returns to the Orcadian community, many fishermen were concerned, sceptic and angry (Johnson, 2011; Johnson, Bell, Kerr, Rydzkowski, & Coleman, 2015). The controversy the leasing of sea beds for marine renewables had caused, showed that the Pentland Firth and Orkney Waters were sensitive for user-user conflicts and competition over marine space. The pilot marine spatial plan was set-up to test a new governance process that should allow for better stakeholder participation. This changing governance context in which Orkney's fishing communities operate is the starting point of this research. As the Orkney inshore shellfish fisher community continually needs to cope with external challenges to continue its own existence, changes in marine governance may pose a threat to the community. Especially when these changes relate to the allocation of marine space and access to marine resources. Marine spatial planning as new mode of marine governance, however, also creates an opportunity for fishermen to actively position themselves in the governance arena and influence the policy-making process. My hypothesis is that, as resilient communities, fisher communities use their community social capital to engage marine governance processes to safeguard their own interests. The objective of this research is to create a better understanding of the relation between community social capital and fisheries' engagement with marine spatial planning. As such I hope to contribute to the body of social capital research and fill the knowledge gap regarding the relation between social capital and marine governance. Community engagement is vital for the effectiveness of marine spatial planning. Participation contributes to the generation of new knowledge and the legitimacy of marine governance (Jay, 2010; van Tatenhove, 2011). Successful marine governance is thus dependent on both institutional and social conditions (Nenadovic & Epstein, 2016). Researching the relation between social capital and fisheries' engagement with marine spatial planning can thus be valuable to gain insight in the social dimensions of marine governance.

1.6 RESEARCH OUTLINE

In chapter two and three, I elaborate on the set-up of this research. Chapter two is dedicated to the theoretical framework that informs this research. Here, I operationalize some of the key concepts and describe the research questions. In chapter three I describe the methodological choices I have made and some of the ethical considerations I have taken into account for my fieldwork.

Chapter four, five, six and seven are dedicated to the findings from the fieldwork and analysis of these findings according to the literature. I have divided these chapters to cover the sub-research questions formulated in chapter two. In chapter four I sketch the governance context in which the pilot marine spatial plan has been developed. Here, I describe the main interests of the fisher community with regard to marine spatial planning, as derived from the field data, and the participatory process as it has been set-up for the pilot plan. In chapter five, I focus on bonding social capital, chapter six is about linking and chapter seven about bridging.

In the final chapter, I summarize my findings by answering the research questions and use these findings to critically reflect on the relationship between community resilience, social capital and civil society participation in governance.

2. THEORETICAL FRAMEWORK

In this chapter, I will elaborate on the theoretical concepts used and the theoretical grounding that informs this research. To gain a better understanding of the concept social capital, I will first elaborate on the notion of community assets in a community resilience context, as the wider theoretical framework from which this research has been developed. Then, I will define social capital, bonding, bridging and linking, and explain the relation between social capital and agency. Finally I will illustrate how these theoretical concepts relate to one another and to marine spatial planning in the conceptual framework and how this framework informs the main research question.

2.1 COMMUNITY RESILIENCE

Community resilience refers to a community's capacity to cope with change and continue its own existence through the mobilization of community assets by community members. This theory acknowledges that communities are dynamic social systems which exist in a context of constant change. It focusses on community-driven development from an opportunity perspective. Underlying assumption is that every community possesses its own set of characteristics - or assets – and community agency which enable the community not only to respond to change, but also to take ownership over development processes. Research into community assets can thus help gain insight in the ways in which community resources and processes drive social change (Magis, 2010; Mathie & Cunningham, 2005).

Community resilience theory assumes that by identifying, developing and mobilizing community assets, communities can drive development processes and respond to contextual changes, threats and opportunities (Mathie & Cunningham, 2005). Development processes are dynamic and continuous; what is sustainable, effective and relevant changes over time and requires constant re-evaluation of development strategies and tools available (Bebbington, 1999). Likewise, human systems, such as communities, are dynamic and face constant change, both from within (social structures, assets and capabilities change) and from the environment in which the system functions (like the natural, political, and economic context). This constant presence of change requires social systems to be flexible. For communities to be resilient, they need to be able to cope with and respond to change. Community resilience is thus about a community's ability to engage community assets to adapt, defend, respond or transform, but also to seize opportunities to ensure the continued survival of the community (Magis, 2010). Resilient communities can pursue different strategies for survival. This ability to act is also referred to community agency, which I will describe in more detail in paragraph 2.1.2.

Every community is unique in its form and functioning. Specific characteristics of the community can either enable or constraint pathways for interaction, action and development. In literature, these characteristics are referred to as community resources, capitals or assets. Bebbington (1999), refers to *capitals* as the resources that people use and that give people the capability (or power) to act, to engage the world around them and to induce change. He distinguishes five types of capital: natural, human, cultural, social and produced. Magis (2010), refers to *community capitals* as resources which community members strategically draw from to respond to change and to address community interests. Magis adds political and economic or financial resources to the capitals identified by Bebbington. For the remainder of this research, I will follow Mathie's & Cunningham's (2005), use of the term *community assets*. They describe community assets as strengths of a community, which can be identified and mobilized to drive development processes. These authors describe social capital as one of the driving assets which connects other community assets and creates opportunities to drive development.

2.1.1 SOCIAL CAPITAL

Social capital is a multidimensional concept. As such, there are several schools of thought regarding the definition of social capital, how it could be measured and how it functions.

The first school of thought focusses on social capital as the connections that shape social networks. This structural perspective on social capital considers social capital to be produced through networking activities (Bærenholdt & Aarsæther, 2002). The idea is that social connections allow an actor to access resources and create or strengthen their assets. As such, the larger the social network, the more social capital one possesses. This school of thought thus focusses on quantity of social connections and favors research methods such as social network analysis. However, what is lacking in this approach is an explanation of the conditions for the creation of social capital and the functioning of social capital within and across networks (Rutten et al., 2010).

The second school of thought focusses on values and norms, or cultural components, of social networks. This interaction perspective of social capital assumes social capital is an outcome of interactions between individuals. Social capital is co-constructed within a network and based on values, norms and beliefs and the kind of interactions that take place. This perspective on social capital recognizes that networks are divers and interactions differ based on the actors involved and the boundaries of the networks in which these actors are set. Social capital is thus contextual and one can distinguish between different kinds of social capital produced, depending on the different scales and types of interaction (Rutten et al., 2010; Rydin & Holman, 2004). This approach allows for an explanation of the functioning of social capital as it describes the different types of relations within and beyond networks (Rydin & Holman, 2004), as I will describe in more detail below. Furthermore, this perspective describes actors as active agents, engaging in different forms of interactions and thereby establishing different kind of relations. This perspective on social capital is compatible with community resilience theory, which assumes communities have agency to (inter)act. Combining resilience theory and the interactional school of thought on community social capital, community members can be seen as agents of change, engaging in social relation within and beyond the boundaries of the community to mobilize assets to engage change and move the community forwards (Cleaver, 2005). I define social capital as follows: practices, values and sets of norms found within different forms of social networks which can contribute to the collaboration, functioning and collective action of the network (Lehtonen, 2004; Rydin & Holman, 2004).

BONDING, BRIDGING, LINKING

A distinction can be made between three types of social capital: bonding, bridging and linking. All three types perform a different function and contribute to community resilience in their own way (Magis, 2010). Bonding refers to the social relations within a community, often correlated to smaller-scale networks and strong social ties (Grafton, 2005). Bonding capital is important for social cohesion and co-operation within a community (Magis, 2010). Bridging capital enables interactions between different communities (Grafton, 2005; Rydin & Holman, 2004), which allows different communities to collaborate and broaden their assets-base (Magis, 2010), for instance by sharing knowledge which can lead to innovation. Linking social capital refers to connections made across scales of governance. This form of social capital is for instance of importance for governance structures, in which fisher communities interact with regulating bodies and market actors (Grafton, 2005). Bonding, bridging and linking social capital thus all perform different tasks. In the context of marine governance, bonding social capital can for instance enable communities to voice their interests, while bridging social capital can connect fisher communities across regions. Both forms would allow fisher communities to strengthen their position in governance, but through different processes (Rydin & Holman, 2004). Linking is especially important for communities to be able to mobilize political resources and power (Grafton, 2005).

Table 2 The three forms of social capital: bonding, bridging, linking

SOCIAL CAPITAL	SCALE	FUNCTION
BONDING	Within (symbolic or spatial) boundaries of the community	Community cohesion and co-operation within community
BRIDGING	Outside boundaries of the community, horizontal connections with other communities	Gaining access to and mobilizing assets beyond the community
LINKING	Across scales, connections made with governance actors	Accessing power and opportunities in governance

All three forms of social capital can stimulate interaction between different actors. As such, social capital could allow the community to strategically position itself in arenas of interest, to develop its assets-base, to strengthen its power position and contribute to the community's resilience. Governance of natural resources takes shape through interaction between three different levels; the state, the market and civil society. Through relationships and interaction with representatives from these levels, agents can "renegotiate the rules governing access to resources in society" (Bebbington, 1999, p.2035). There is thus a plurality of 'arenas' in which interactions take place, with each arena having its own set of rules, ideas and practices (Cleaver, 2007). At different scales of governance and in different arena's, different kinds of social capital can be used to reach community objectives (Bebbington, 1999; Rydin & Holman, 2004). For this research, I will look into the presence of all three forms of social capital in the inshore shellfish fisher community

in Orkney, with specific focus on how bonding and bridging relate to the linking social capital of the community and how the community uses linking to participate in and influence marine spatial planning.

Social capital, however, also has its limitation. A strong focus on bonding capital can, for instance, lead to defensive communities which inhibits flexibility and external interaction and as such opportunities for change (Rydin & Holman, 2004). Furthermore it is important to note that there is always diversity within social networks and inequalities can exist. This means that not every member of a network might be equally well positioned to access social capital (Bebbington, 1999; Lehtonen, 2004). Nonetheless, social capital is a valuable concept because it provides an explanatory basis for social (group) behavior based on community norms, values, beliefs and social relationships. The concept assumes that within a community, particular resources exist that enable pathways for interaction, action and change based on the social relations that exist within that community. On the one hand, social capital is thus about the kind of connections made between individuals within a social network, on the other hand, social capital facilitates internal and external interactions. This is what Rutten et al. (2010), refer to as the glue and lubricant in social relations.

2.1.2 AGENCY

Community resilience theory presumes that communities have agency in the sense that they take planned action to affect and respond to change. Agency is a term used to explain *how* social capital works (Magis, 2010). Agency is a social concept which refers to the ability to purposefully make decisions (choose a course of action), to act and as such, to exercise power. In the context of development, agency can be exercised to influence governance and access to resources (Bebbington, 1999; Pelenc, Bazile, & Ceruti, 2015). Agency is influenced by the same assets that limit or enable agents in their behavior, such as human capital (e.g. individual skills, knowledge or health), institutions and hegemonic power structures (Cleaver, 2007). There is thus a dual relation between assets and agency; on the one hand, the exercise of collective agency (for example, in the form of collective action) contributes to the development of community assets, on the other hand, community assets create the basis from which agents can act and are thus the source of agency (Bebbington, 1999; Ehler & Douvere, 2007; Mathie & Cunningham, 2005; Pelenc et al., 2015). Access to assets is therefore a fundamental condition for collective agency (Mathie & Cunningham, 2005). Furthermore, through collective action, communities exercise and legitimize their authority to influence decision-making processes. Not all agents are equally well positioned to exercise agency to inspire change, but agency can be used to challenge hegemonic power relations, existing norms and rules and social inequality and can as such have transformative power within and across communities (Cleaver, 2007). Community members thus need agency to employ community social capital in order to reach community objectives. While certain forms of social capital may be present within a community, this does not mean community members (are able to) use it to their advantage when community members lack agency.

2.1.3 OPERATIONALIZATION SOCIAL CAPITAL AND COMMUNITY

The trouble with measuring social capital is that, unlike many other forms of capital, such as financial capital, in most cases, social capital doesn't materialize. Therefore, physical measurements of social capital are challenging. When using the structural approach to social capital, one could map the social network an actor is involved in. For the interactional approach, however, mapping social capital is more complex (Bærenholdt & Aarsæther, 2002). Often, measurements focus on indicators of social capital, such as trust, or factors that influence social capital, such as human capital (Grafton, 2005). Rydin and Holman (2004), describe some of the dimensions of social capital that influence the measurement of the concept. First of all, the boundaries of the community need to be clearly defined. As the distinction between bonding social capital and bridging social capital depends on the definition of the community, being able to make a distinction between these two forms of social capital depends on the definition of community boundaries (Bærenholdt & Aarsæther, 2002). The boundaries of the target population are as follows: a community¹ of inshore shellfish fishermen who are active on the Orkney Islands, fish the inshore waters of the Orkney Islands and land in the island harbors. Second, and connected to the first point, the boundaries of the target population are often related to a place or territory. Fishing communities are often rooted in a specific locality, such as the harbor town in which catches are landed (Urquhart & Acott, 2013). Bonding social capital is strongly associated with social linkages within a specific locality whereas bridging social capital can refer to linkages beyond the spatial boundaries of the community (Rydin & Holman, 2004). In chapter five I will elaborate on the boundaries of the inshore shellfish fisher community as identified by its members, and how these boundaries relate to bonding social capital. A third dimension of social capital is scale. Linking social capital refers to connections made across levels (market, state, civil society) and scales (e.g. regional, national or international). Based on these spatial differentiations, I use the following distinctions between the three forms of social

¹ For a critical reflection on the use of the term *community*, please refer to 3.2 CASE STUDY DESIGN, p. 17

capitals: bonding social capital consists of expressions of social capital between members of the Orcadian fisher community I defined above, bridging refers to connections between this fisher community and other communities both on the Orkney Islands and beyond, and linking refers to connections made between the community and market or governmental actors in the marine spatial planning process.

For all forms of social capital the community is thus the central unit of analysis. A community can be described as a social construct that represents a social identity, often linked to a geographic locality, based upon symbolic boundaries of difference and similarity and a shared cultural history (Urquhart et al., 2011; Williams, 2008). Communities are built around social networks which are inherently diverse and dynamic (Magis, 2010). Communities are based on a shared sense of identity, which is produced through the constant interpretation of distinction from outsiders to the community and similarity within the community (Ross, 2013). A sense of identity can be strengthened through a shared history and is expressed through community values and practices (Urquhart & Acott, 2013; Williams, 2008). Coming to a definition of the community is thus an outcome of social interaction and continuous re-evaluated and interpretation of similarity and difference based on the (symbolic) boundaries of the community and community norms and values (Williams, 2008). Ross (2015), refers to these perceived communities as “communities of the mind”. She explains that communities are given meaning through interpretations by community members, based on their experiences, shared values and feelings. Community values are shared conceptions of morality. These shared perceptions of right and wrong shape both the community interpretation of reality and community behavior through social norms. Norms are the expression of underlying values and refer to the expected behavior of individuals within a social group. Norms are unwritten social rules and defiance of norms is generally frowned upon by the wider social group. Community responses to defiance of social norms is, however, very context specific. Together, norms and values shape the moral conduct of the social community. Community values can be measured through direct questioning or can be deduced from observation and analysis of (community responses to) social behavior (Hendrix, 2005; Jager, Mok, & Sipkema, 2014). Ross (2015) argues that this symbolic community of the mind contributes to community resilience through solidarity, community values and bonding, which are examples of social capital.

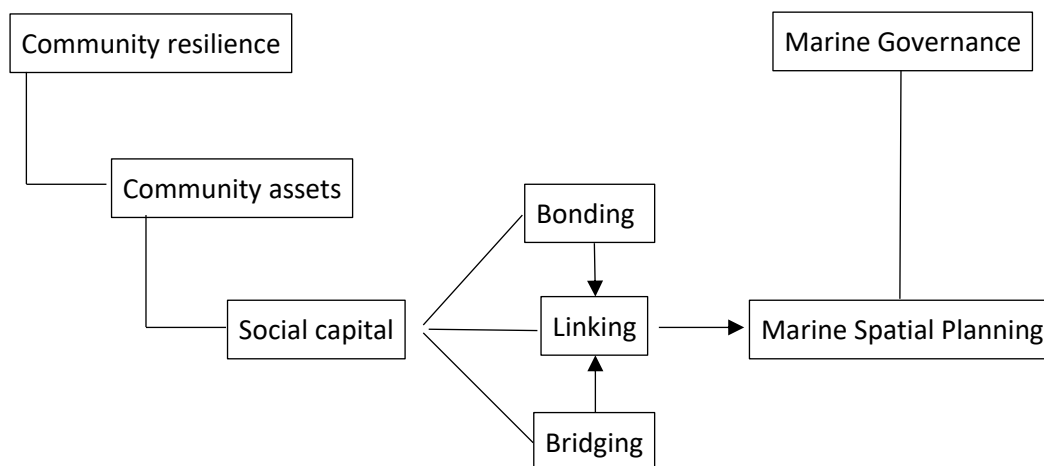


Figure 2 Conceptual Framework

2.2 MARINE GOVERNANCE AND MARINE SPATIAL PLANNING

In this thesis I will look into the relation between social capital and fisheries’ participation in marine spatial planning. Marine spatial planning is a relatively new tool for marine governance. In this paragraph, I will briefly introduce the concepts marine governance and marine spatial planning.

2.2.1 MARINE GOVERNANCE

Governance refers to the process of governing, in the widest sense. It is a process of decision-making between different actors, set in a (in-)formal institutional context which both influences and is influenced by this process (van Tatenhove, 2013). Through this ongoing process and interaction with existing systems (e.g. social or political), decisions are made to shape, organize and manage the subject of governance based on stakeholder objectives (Sutherland & Nichols, 2006). Based on this broad definition, governance can take many forms, takes place across multiple scales and is influenced by

diverse stakeholders (Sutherland & Nichols, 2006; van Tatenhove, 2013). Marine governance is the management and planning of marine spaces (Sutherland & Nichols, 2006). In this thesis, I will use the following definition of marine governance;

Marine governance is the sharing of policy making competencies in a system of negotiation between nested governmental institutions at several levels (international, (supra)national, regional and local) on the one hand and governmental actors, market parties and civil society organizations on the other in order to govern activities at sea and their consequences (van Tatenhove, 2011, p. 95).

This definition highlights some important characteristics of marine governance. First of all, marine governance takes place in a *system of negotiation*. This system of negotiation is the setting in which a mutual discourse is formulated, a shared understanding is negotiated and the subject of governance is problematized in order to come to new objectives of governance (Cleaver, 2007). This setting consists of a multitude of levels and scales across which networks are formed and interactions take place. On the one hand, this plurality of scales creates opportunities for renegotiation and inclusion (Cleaver, 2007), on the other hand, it can lead to tensions between governance arenas, fragmented decision-making (van Tatenhove, 2011, 2013), a tapestry of policies (Sutherland & Nichols, 2006) and a reproduction of power structures which can obstruct participation and equality (Cleaver, 2007; van Tatenhove, 2013). Participation is, however, an important element of the second aspect of marine governance: the governance process is an outcome of interactions between stakeholders from different levels (state, market and civil society). Good governance prescribes the inclusion of and recognition of the interests of stakeholders in the governance process and emerging policies (Sutherland & Nichols, 2006). Stakeholder engagement and participation are therefore corner stones of legitimate governance arrangements (van Tatenhove, 2011). There are several *degrees* of participation, as well as different stages of participation, which affect governance legitimacy, as will be discussed in more detail below. Finally, the objective of marine governance is *to govern activities at sea and their consequences*. As such, marine governance addresses both human and environmental threats to the marine environment while pursuing economic, social or political development objectives (Zervaki, 2015).

2.2.2 MARINE SPATIAL PLANNING, A TOOL FOR MARINE GOVERNANCE

Marine spatial planning (MSP) is a tool for integrated marine governance, which aims to stimulate the sustainable use and development of marine areas through an integrated and forward-looking strategy (Ehler & Douvere, 2007). Several definitions of MSP exist, but they are in overall agreement that it regards an integrated, holistic ecosystem-based policy approach for the allocation of three-dimensional marine space in order to minimize use conflicts while pursuing sustainable development objectives (Jay, 2010; Symes, 2005; Zervaki, 2015).

The objective of MSP is to sustainably manage human activities within a marine area while minimizing conflicts in the form of user-environment conflicts and competition over space. This ecosystem-based approach implies that MSP creates a forward-looking strategy but also that decision-making is founded on environmental data (Defra, 2005; Jay, 2010). The planning process therefore includes analyses of current and future demands for marine space, environmental impacts of marine activities in time and space, and organization of the use of marine space (Ehler & Douvere, 2007; Tyldesley, 2004). Advances in technology, knowledge and mapping tools makes the 'open sea', which has generally been perceived as "unoccupied, uncongested and unregulated space" (Symes, 2005, p.7) more and more accessible for planning (Jay, 2010). Apart from incorporating existing knowledge, MSP therefore also stimulates the generation of new knowledge on user-environment interactions and ecosystem development. Not only does this knowledge inform decision-making, it is also essential for the monitoring and evaluation of marine developments (Jay, 2010; Sutherland & Nichols, 2006). As knowledge informs negotiations and policy-making, the generation of knowledge can be seen as a powerful tool in governance processes. Spatial information may be used to define boundaries, define risk-levels and create or solve conflicts (Smith, 2015; Sutherland & Nichols, 2006). The generation, interpretation and use of knowledge is thus an inherently political process (Jentoft & Knol, 2014). As I already briefly mentioned, social capital can facilitate the exchange of knowledge between community members, different communities and actors involved in the governance process (Bærenholdt & Aarsæther, 2002; Grafton, 2005). Through social capital, community members can thus gain influence over the (co-)creation and dissemination of knowledge in different governance arenas. Processes of knowledge exchange and creation can thus be seen as expressions of social capital within the marine spatial planning process.

2.3 RESEARCH QUESTIONS

To summarize, community resilience refers to the ability of community members to mobilize community assets in order to respond to and thrive in a context of constant change. Community resilience is strengthened through the development of community assets and the exercise of agency. A community can be regarded as resilient when community assets exist, are being developed and being engaged (Magis, 2010). Social capital is one such asset and refers to the cultural and structural characteristics of social networks (Nenadovic & Epstein, 2016). Social capital enables interactions between different actors, both within the social network and beyond. In relation to marine spatial planning, social capital can refer to linkages within the community, between different communities and between different scales of governance (Rydin & Holman, 2004). As described in the introduction, marine governance is a process of negotiation among different stakeholders. Stakeholder participation is therefore central to ensure legitimacy and effectiveness of marine policies (van Tatenhove, 2011, 2013). It is an opportunity for stakeholders to voice their interests and exercise power to act as agents of change (Bebbington, 1999).

Marine spatial planning is a tool of marine governance. It is a holistic, ecosystem-based approach aimed at balancing interests of different marine users, to minimize user-user and user-environment conflicts while pursuing development objectives. With the development of a marine spatial plan, a spatial, holistic vision for marine development is constructed (Defra, 2005; Jay, 2010; Tyldesley, 2004). Fisher communities are among the key stakeholders in marine spatial planning, but might also be at risk of becoming weaker actors in governance negotiations, due to their social, economic and political position (Jentoft & Knol, 2014; Symes, 2005). As the literature on community resilience suggests, resilient fisher communities are able to cope with, actively engage with and induce change in favor of the community.

This research takes the pilot marine spatial plan which has been developed for the Pentland Firth and Orkney Waters in Scotland as a case study for fisheries engagement with marine governance. I propose that the introduction of marine spatial planning symbolizes a change in the governance context in which the fisher community operates, and which can be perceived as a threat to the community. This research will focus on the ways in which the Orkney inshore shellfish fisher community employs its social capital to engage the changing marine governance context in which it functions. This leads to the following research question:

Does the Orkney inshore shellfish fisher community display community resilience through the use of social capital to be involved in and influence marine spatial planning?

The sub-research questions are:

1. How has the Orkney inshore shellfish fisher community been involved in the development of the pilot Marine Spatial Plan for the Pentland Firth and Orkney Waters?
2. What have been the key interests of the inshore shellfish fisher community in the development of the pilot Marine Spatial Plan for the Pentland Firth and Orkney Waters and in what ways has the inshore shellfish fisher community put these interests forward in the governance process?
3. In what ways can the involvement of the inshore shellfish fisher community in the governance process be characterised according to the three forms of social capital: bridging, bonding and linking?

3. METHODOLOGY

In this chapter, I will outline the choices I've made in research methods and case selection. First, I will describe the Orkney inshore shellfish fisher community. Then, I will reflect on the methods used to study the community and to find answers to my research questions. Finally, I will reflect on some ethical considerations for social research and the case study design. I will also give an overview of my budget and planning for this research.

3.1 FIELDWORK

My fieldwork has taken place from the start of September until half November 2016. For 10 weeks, I stayed on Mainland (the biggest island of the Orkney archipelago), where I conducted interviews, made observations, studied the Orcadian archives and explored the islands. I was living in a student house in Kirkwall with a bedroom view of the Peedie Sea and the Kirkwall Harbor. As I had travelled to Orkney by motorbike, I had my own mode of transportation and was able to visit the other harbors of Mainland, Burray and South Ronaldsay on a regular basis. I also visited the islands Rousay, Shapinsay, Hoy and Westray and conducted interviews there.

The Orkney Islands are an archipelago about 10 kilometers north of the north-east coast of Scotland. This island group consists of over 70 relatively small islands and skerries of which about 19 are inhabited. Due to their geographic location and relative isolation, these islands have unique ecosystems which support and shape the islands' biodiversity, habitats and landscape, contribute to the health and wellbeing of island communities and provide diverse economic opportunities (Marine Scotland, 2015; Orkney Islands Council, 2013b).



Figure 3 Location of fieldwork

3.1.1 THE ORKNEY INSHORE SHELLFISH FISHERIES

As was briefly described in the introduction, the sea has always played a significant role in the development of the Orkney Islands. The first settlers came to these islands by sea and the sea has been elemental for trade and defense ever since (Towsey, 2002). Many coastal and island settlements develop strong fisher cultures and identities that shape their communities (Urquhart & Acott, 2013; Williams, 2008). In Orkney, however, commercial fishing has been a relatively short lived tradition. The islands have a strong agricultural character and are known, for instance, for their meat products and special breeds of sheep. Although fishing has always been done on a small scale to supplement the local diet, the commercial potential of the sea was for many decades primarily exploited by foreign fisheries. Before Orkney developed a full-time, large scale, occupational fleet, fishing consisted mainly of hand lining, inshore creeling and fishing for cuithes. These forms of fishing were done in addition to farming and other occupations (Towsey, 2002, 2004).

From the 1950's onwards, fishing got a more industrial character, with the introduction of large vessels which allowed fishermen to sail for days on end, only to return to land their catches and then sail out again. With the development of

a professional fleet, onshore processing facilities and harbor facilities gained importance for community employment and economic development (Towsey, 2004). In Westray, for instance, the harbor processing facility employs a full-time staff of 28 people and additional seasonal labor, in a population of 600 people (Linkie, 2016c).

Today, Westray has a fleet of modern fishing vessels in the 90-100 ft. class with enclosed decks, comfortable living quarters, efficient and labor-saving fish-handling equipment and a wide range of electronic aids for navigation and fish-finding. These vessels are crewed by young fully-qualified and experienced professionals dedicated to fishing as a career – prepared to go where the fish are in all weather conformable with common sense. [...] This brings up a very significant part in the economy of the isle; not long ago, farming was the industry which governed the population of Westray. Today it is fishing (Rendall, 1987, p.60).

Today, the Orkney fishing fleet consists of large (over 15m) off shore shellfish and white fish vessels, boats for scallop divers and inshore shellfish vessels ranging from 1-person *dingies* to 15m vessels with multiple crew on board (Linkie, 2016a). There are 130 vessels active in Orkney, which employ 297 fishermen, spread over the different ports and islands. Although the Orkney fleet has been shrinking steadily for a few years, there has been an overall increase in landings in the past three years. This may in part be explained by modernization of boats and equipment (Marine Scotland Science, 2015). The fishing district of Orkney contains 9 ports: Hoy, Kirkwall, Rousay, South Ronaldsay, Sanday, Stromness, Stronsay, Tingwall and Westray. Over 2014, 4113 tons of fish was landed in these ports, with a total worth of £7.781.000. About 98,5% of the 2014 landings were shellfish species, of which the majority was brown crab (The Scottish Government, 2015). These shellfish are mostly caught with relatively small fishing boats (<15 meters), which fish the inshore waters of the Orkney Islands (Jamieson, Munro, & Perrier, 2009a). About 2/3 of Orkney's fleet consists of these <15 meter boats (Orkney Islands Council, 2013a). The inshore sector is dominated by small scale family businesses and especially relatively isolated harbors and villages are highly dependent on these smaller boats for labor and income (Marine Scotland Science, 2014).

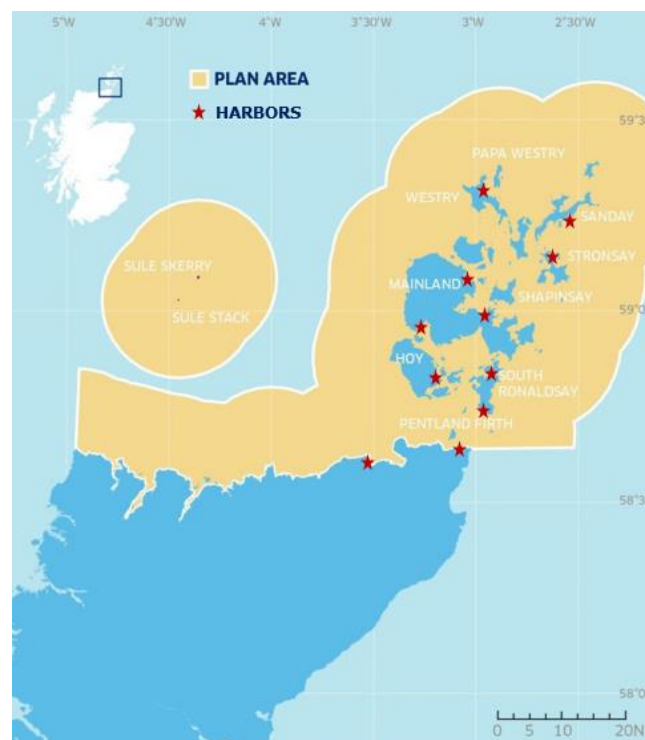


Figure 4 Main harbors of the Orkney Islands

Derived from The Scottish Government (2017a)

The Pentland Firth and Orkney Waters are the main fishing grounds for the under 15m vessels. These smaller boats are less equipped to face rough weather conditions in the offshore areas and primarily fish the inshore grounds. Their size provides the benefit of being able to access shallow waters which are rich breeding grounds for shellfish and crustaceans. 90% of the catches from the under 15m vessels, are caught in the PFOW and the Orkney ports receive about 50% of their landings from these waters. The inshore shellfish sector thus has a high stake in marine developments for the Pentland Firth and Orkney Waters (Marine Scotland Science, 2014).

3.2 CASE STUDY DESIGN

Following the problem definition and research questions, this research is based on qualitative methods for data collection as part of a case study design. The case study design is a form of qualitative research which aims to create a better understanding of a specific (social) phenomenon, a situation or event, a social group, institution or location. The objective is to study a specific case in its natural context (Boeije, 2005). Typical for this type of research is that findings from the field are interpreted in a theoretical context in order to contribute to scientific debates. Underlying assumption of this type of research is that behavior and social structures are shaped by underlying social norms, beliefs and traditions (Wester & Peters, 2004). Reality, as such, is constructed through social interaction, which are an expression of people's interpretation of reality. Through interaction, people develop a shared understanding of reality. Based on these assumptions, communities are a social construction in which people group together and form a shared reality. In order to research reality, one must thus observe, measure and analyze these real-life events, social groups or interactions (Boeije, 2005).

The case this research is based on is the engagement of the Orkney inshore shellfish fishermen with the pilot marine spatial planning process for the Pentland Firth and Orkney Waters in the timeframe between 2010 and 2016. It is thus a case based on a specific process set in a specific locality and time period.

For this research I have focused on inshore shellfish fisher community of the Orkney Islands. I use the term *community* out of practical reasons; as an indicator for my target population. But also because my hypothesis is that the inshore shellfish fishermen form a social network which possesses community assets, such as social capital, and shared objectives for development. I do, however, realize that researching a community can also be problematic. First of all, communities exist in many forms. Not all communities may be *close-knit*, or may present these previously mentioned reciprocal social ties. Furthermore, although communities are based on interpretations of internal similarities and distinction from non-members of the community (Williams, 2008), social networks are inherently divers. In every social group, there is some form of inequality, as there is a center and a periphery to any network. Some members of a community may thus be more or less able to access and use resources available within the community or to voice their opinion within the community (Bebbington, 1999). Finally, the definition of community as a social construct makes communities inherently subjective. One must thus be careful with making generalizations regarding communities or interpretations of community (Ross, 2015). Entering the field, I have taken these considerations into account and I will reflect on these further in the paragraph 3.3 ethical considerations.

As described in the Theoretical Framework, the main unit of analysis are expressions of social capital in the inshore shellfish fisher community of the Orkney Islands in a marine spatial planning context. To discover how the inshore shellfish fisher community has responded to the marine spatial planning process, what forms of social capital can be identified within the community and if and how these have been activated in the marine spatial planning process, I have conducted semi-structured qualitative interviews with fishermen, policy-makers and researchers. In addition, I have collected data from the local newspaper and policy documents related to the pilot marine spatial plan for the PFOW. For the analytical part of this research, I have compared the case study findings with literature on marine governance, marine spatial planning, social capital, community assets and resilience, and fisheries governance.

3.2.1 RESPONDENT SELECTION

To find answers to my research questions, I have focused on three main categories of respondents: fishermen, representatives of fisher organizations and policy-makers involved in the development of the pilot marine spatial plan for the Pentland Firth and Orkney Waters. During my fieldwork, I found a fourth category of respondent; researchers involved in marine spatial planning research and fisheries' research in Orkney. My target was to conduct a minimum of 15 interviews, the majority of which with fishermen of the inshore shellfish fisher community (see Appendix I).

Getting in touch with representatives of fisher organizations, policy-makers and researchers turned out to be relatively easy. These respondents have public contact information on websites and are familiar with research and interviews. Furthermore, it was relatively easy to explain to objective and relevance of my research to these respondent. Getting in touch with fishermen, however, proved to be more difficult.

At the start of my research, I tried to contact fishermen through my key contact at the Orkney Fisheries Association (OFA). Through this key contact, I got some advice on whom to talk to and phone numbers to contact them. This

approach, however, soon proved to have some down sides. First of all it is very challenging to contact fishermen over the phone since they are often at sea where they can't get a signal. This reduced communication options to texting or strategically timed phone calls. E-mail was an even more restricted option as not all fishermen have e-mail or check their e-mail on a regular basis. The second down side related to the validity of my research; by contacting the recommended fishermen whom were connected to the OFA, I was likely to get some biased responses in favor of fisher organizations, as well as the voices of those most vocal fishermen or those most engaged with the OFA.

After some trial and tribulation, I thus decided to adjust my approach. I had already visited a lot of the mainland harbors, and some harbors on other islands as well, but had mainly done observations there. I now decided to approach fishermen working in the harbors, to have some small talk and to invite them for short interviews. This approach proved to be much more effective and even gave me the opportunity to conduct a participatory observation on one of the small fisher vessels and to experience what a day at sea looks like.

At the start of my research, conducting 15 interviews seemed to me like a piece of cake in ten weeks' time. I set-up a planning in which I would do three interviews per week. This allowed me to easily reach the target. In practice, however, setting-up contacts, staying in touch with these contacts and arranging meetings turned out to be much more challenging and time consuming than expected. In the end, conducting the interviews required a lot of flexibility on my end as I became as weather and circumstance dependent as the fishermen themselves. When the weather was good, they would be out at sea making money. When the weather turned south or the sun was setting, the fishermen would come back to shore to land their catches and mend their gear. The smaller 1-person boats (*dingies*) have shorter days at sea than the bigger vessels, and were therefore be slightly easier to approach.

Approaching fishermen meant stepping out of my personal comfort zone. I felt a slight uneasy with walking up to these strangers (who surely had better things to do) and asking for their participation in my research. Explaining what I was doing and why was at times challenging. Some people would ask me for what organization I was doing this. Explaining that I was just a student doing her master thesis would sometimes receive positive responses, as I was coming from a personal interest in fishing, but also negative responses, as some fishermen did not see their personal benefit in participating in my research. Overall, however, most fishermen were easily approachable, friendly and very helpful. I always applied the snowball effect by asking fishermen I had spoken with for tips about what other people I could talk to.

3.2.2 INTERVIEWS

One of the main forms of data collection for this research has been open, semi-structured interviews. An interview is a purpose-designed question-based conversation between respondent and researcher (Wester & Peters, 2004). The open semi-structured form of interviewing allows for flexibility within the conversation which can contribute to the quality of the collected data. A pre-defined topic list with example questions and probes guarded the structure of the interviews and the possibility to draw conclusions from the findings (see Appendix II). The formulation of the questions and the topic lists were tailored to the four types of responded mentioned earlier. Most interviews have been recorded in agreement with the interviewees. In the few occasions an interviewee did not want to be recorded, I wrote summaries of our interactions after the interviews. For data analysis, these interviews were transcribed and coded manually.

In her reflections on her fieldwork in Orkney, Towsey (2004), describes the difficulties she came across doing interviews with Orcadians. Some barriers she identified in gaining access to her target population were being an outsider in general, but also cohorts such as age, class and gender, which can influence interview responses. For me personally, I could imagine, being a relatively young female who has never lived on an island nor has had any experience with fishing, I could be considered as naïve, unknowing or uninteresting to local fishermen. To convey trustworthiness and expertise, I have sometimes referred to my contacts at the fisher organizations and the Centre for Nordic Studies (as most fishermen from Mainland are familiar with this research center).

The interviews I conducted with fishermen took place in three different locations; in the harbor, on deck of their boats or in harbor café Helgi's in Kirkwall. These locations had both benefits and downsides. I personally didn't prefer conducting an interview in the harbor because of the cold weather, the discomfort of standing outside in the wind and rain for an hour, the distractions of people passing by and the background noise on my recorder. The harbor was, however, a practical and familiar place for fishermen to meet up and it allowed us to point at objects, places or people to illustrate the topics discussed. To avoid the negative aspects of doing interviews in the harbor, I would also invite some fishermen to have a cup of coffee at Helgi's, one of the harbor cafés. Here, we could sit comfortably and thus have a longer conversation. The café was, however, quite well visited and at times, the interviewees would see acquaintances. This awareness of being in a public space might have (unconsciously) influenced the interviewees'

comfort with more sensitive topics and might have led to more socially accepted answers to my questions. Although it is important to reflect on the impact of surroundings on research findings, I think that in this case, this bias won't be strong. I interviewed two fishermen at the café and both were very strong minded, vocal in their opinion and they both emphasized their trust in my discretion and professionalism. Conducting interviews on board of fisher vessels proved to have the best of both situations. Sitting in the cabin provided shelter, didn't have too many distractions, allowed us to look at relevant objects, people or places during the conversation, was a familiar place for the interviewee and allowed me to make quality recordings. The interviews with researchers, policy-makers and representatives of fisher organizations all took place in their offices in Stromness, Kirkwall and Aberdeen.

3.2.3 DOCUMENT REVIEW

The first sub-research question is aimed at getting insight in the marine spatial planning process and the role of Orkney's inshore shellfish fisher community in this process. To gain more insight in the governance processes around the PFOW, I have analyzed publicly available policy documents. These documents were obtained through the Orkney Island Council and the Kirkwall library archive. To gain more insight in the way the policy process was documented and publicly received, I also studied past publication from the local newspaper *The Orcadian*, from 2010 to 2016. These were obtained through the Kirkwall library archives, where relevant articles were scanned and printed for coding and analysis.

To put the findings from the field research into a wider theoretical marine governance and community resilience context, I have conducted an in-dept literature review on the concepts community resilience, social capital, bonding, bridging, linking, marine governance and marine spatial planning. Main sources for this literature review have been the Wageningen University library database, Google Scholar, the ScienceDirect database. Reference lists from relevant articles were also used as reference for further research.

3.2.4 PARTICIPANT OBSERVATION

I have conducted one participant observation on board of one of the *dingies*. I spent a day on board and observed (and modestly assisted) the owner in preparing, sailing out, hauling creels, and returning his catches to the harbor. This observation allowed me to get a better understanding of what life at sea looks like. I also made multiple observations in harbors, to get a feeling of the daily rhythm of fishermen. I for instance observed early morning preparations before sailing out, I observed boats landing their catches, and the interactions that took place between vessels and fishermen when returning to the harbor. My observations and notes on the informal conversations that took place are part of my fieldnotes. I used my fieldnotes throughout the field research period to reflect on my research approach and interview questions. The observations allowed me to better relate to the topics fishermen discussed when describing their work. I was better able to ask informed questions, which showed fishermen I knew what I was talking about. Another advantage of participant observation was it allowed me to take photographs, both to document observations and to visualize the fieldwork in the final report.

But most importantly, it allowed me to literally see the Orkney waters from a completely different perspective. I already slightly experienced this different perspective when taking ferries to other islands. When you are sailing, you see the waters around Orkney as a used space, you come across multiple users – such as ferries, aquaculture farms and fishing boats – and you can actually see the routes that are being used, in relation to the islands and hidden obstacles in the water. This is different from the perspective you get from land. The water seems much bigger and less occupied from the land.

3.3 CODING AND ANALYSIS

In order to make sense of research findings, observations from reality (the data) are broken down into comprehensible units (concepts) and analyzed using a specific lens (the theory). In other words, observations from reality are ordered and composed in an attempt to find structures and explanations (Boeije, 2005; Wester & Peters, 2004).

To structure my data, I have used coding; a method for data analysis, whereby codes are used to link research findings to the theoretical framework that guides the research (Wester & Peters, 2004). The same codes were used for the field notes, interviews, document and literature review. Two methods for code selection were used. First of all, I used a deductive approach in which I subtracted codes based on the preliminary literature review and the theoretical framework. Some examples were codes to indicate the three forms of social capital; bonding, bridging and linking, to indicate fisheries' participation in policy processes, interests of the fisher community, conflict and fisher organizations.

The second form of coding was based on induction, whereby I selected recurring themes from the research findings and included codes based on these themes in my analysis. Some examples are spatiality and knowledge (for full coding table see Appendix III).

3.4 ETHICAL CONSIDERATIONS AND VALIDITY

There are several ethical considerations that are important to take into account when conducting field research. As was already briefly discussed above, ensuring a valid representation of the target population can prove to be challenging. Social research always inhibits some risk of misrepresentation of the target population through hidden power relations and biases in selection procedures. The risk is that those who are most vocal, speak first. Meaning that people most confident or well positioned to share their perceptions, are most likely to be put forward as potential respondents or to volunteer. At the same time, other voices might be overheard, although they are of no lesser value. It is therefore equally interesting to reflect on what topics are not talked about, as these absent topics may be indicators of taboos or conflicts (Towsey, 2004). In the selection of respondents, I tried to talk to fishermen from different harbors and ages and I tried to talk to people who were and were not involved with fisher organizations. Although it was my intention to return with a diverse list of respondents, there is a bias in this research towards fishermen from Kirkwall, Mainland who are involved with fisher organizations. In practice, these fishermen were most accessible and most willing to participate in the research. This bias in the population will have implications for my conclusions, something which I will reflect upon in more detail in the discussion.

There are several other ways in which biases in the research may occur. First of all, there may be social desirability, which means respondents tend to give the socially accepted answer when asked for their opinion (Boeije, 2005). The risk of this bias is especially present in research in relatively small communities. In smaller communities, residents may be wary of projecting strong opinions in public, as often, there is little chance of remaining anonymous. Towsey (2004), refers to this as throwing a pebble in a bucket of water; the boundaries of the small community are the walls of the bucket that bounce back the waves of the splash. In other words, opinions expressed by respondents are likely to be traced back to them, leaving them to deal with the consequences of their honesty. It is therefore important to communicate clearly about the purpose of the research, the topics of interest, the use of the collected data and the measures installed to ensure anonymity. For my fieldwork, I brought anonymity forms, as provided by the Wageningen University and Research Centre, which could be signed with respondents, but in practice this was never needed. Another important way to minimize this bias in interviews, indirect questions can be asked and a trust relationship must be established between interviewer and respondent (Boeije, 2005). To ensure anonymity, names of respondents are feigned in the final thesis report.

A final, an important bias which may occur, is through me as a researcher. In conducting qualitative research, one must always reflect on the influence of the researcher on the interpretation and collection of data. There is a risk that as a researcher, you look for specific answers to your questions which influences your observation and interpretation of data. Furthermore, as a social sciences researcher with a background in communication, I will be tempted to frame my findings in a way that connects to my personal knowledge and interests. It is important to consider these observations as part of a wider dynamic context, something which I will reflect upon in more detail in the discussion.

Reflection on the data and research practices is not something which is left to the end of the research; it is a continuous process. During my fieldwork, for instance, I have reflected on my own approach and adjusted methods for data and stakeholder selection, I have reflected on my topic lists for the interviews and made minor adjustments based on the literature and document review and findings from the interviews. These reflections are necessary to respond to unexpected circumstances and findings without losing sight of the overall research objective. Furthermore, they are an important tool to ensure validity of my research. By taking findings from the field and verifying these with other respondents, I was able to test my interpretations. For instance, I referred back to topics brought up by fishermen in my interviews with policy makers and researchers (Boeije, 2005).

4. MARINE SPATIAL PLANNING FOR THE PENTLAND FIRTH AND ORKNEY WATERS

In this chapter I will describe the marine spatial planning process that took place for the Pentland Firth and Orkney Waters between 2010 and 2016. First I will describe how fishermen perceive marine governance regulation in relation to the viability of the inshore shellfish fisher sector. I will give a brief overview of the set-up of the pilot planning process and the ways in which participation was incorporated this process, based on reports by the Orkney pilot marine spatial plan team, interviews and the document review. Based on interviews with fishermen and representatives of fisher organizations, I have identified two key concerns of the fisher community with regard to marine spatial planning for the PFW: power and spatiality. Finally, I will briefly describe the institutional complexity of marine spatial planning in Scotland.

4.1 MARINE SPATIAL PLANNING: CAUSE FOR CONCERN FOR ORKNEY FISHERMEN

In the interviews, observation and informal personal communications, many respondents referred to changes in legislation as being a new form of insecurity for the fishing community. The perceived increase in regulation and legislation has practical implications in the sense that it increases the amount of paperwork that needs to be done and it impacts fishing practices and requirements for vessels, gear and crew. But it also impacts the fishing experience. As one respondent put it: “there’s more rules and regulations and bullshit. It takes away the enjoyment. It’s more business-like” (Chris, October, 2016). Fishermen feel restricted and controlled. The increase of legislation is experienced as a loss of freedom and self-determination. Many fishermen feel that, as they are knowledgeable about the sea and marine life, they feel they are very capable to determine what is viable for the fisheries and what is not. Top-down decision-making, for instance on marine protection and safety measures, are experienced as intrusive and not based on fisher reality or sound evidence (Earl, November, 2016).

Fishing is that uncertain anyway. It can look great this year, but it might not be next year, when you look at the catch. But that is what we live with. That is what we do. It is part of the gamble and part of the skill. If you’ve been a fishermen for a long time you will see that things move in cycles. We use our skills and our judgement on what we see when we catch our fish, but there is this whole army of bureaucrats sitting in Marine Scotland making stuff up. That is where the uncertainty comes from, where you don’t want to invest in fishing, or it makes it harder.... You have got to jump in sometimes, but it is a big gamble. And again, that won’t be seen by people who sit at a desk in marine Scotland, that type of thing. They wouldn’t fully understand all this (Chris, October, 2016).

Fishermen consider themselves as the last hunter gatherers. Fishermen have that perception of what they do. They can go out and be completely self-determined. Freedom is very important. Anything which impinges on that is not likely to be welcomed (Norman, November, 2016).

The increased perceived pressure from legislation limits the ability of fishermen to be flexible in their responses to changing circumstances and daily challenges. Especially smaller vessels, which are limited in their coping strategies due to limited resources and vessel capacity, are vulnerable to limitations in their flexibility (Bella, September, 2016; Linkie, 2016a; Tom, October, 2016).

Fisheries have a natural cycle and fishermen would normally just follow that natural thing. But the way the rules are set now, you can’t do that. So you’ve got continuous fishing for single species which is bad for the environment, bad for the economy... Not good socially, within small islands, you’ve got to be able to fish, mobile fishery. [...] The way the rules are set now... There’s no flexibility within the rules. They are so hard and stringent and complex. Over the years the rules have become more and more complicated and they’ve got more difficult to follow (Morris, October, 2016).

I am not a big boat, I can’t go there out in the danger. I will not get home. You work within your vessels capabilities. So where your vessels can go up, you know. So if they are closing off certain areas, that’s the end of your livelihood, you are gone. So you have to be sensible with how you set rules. You have to think about your wider population (Dennis, November, 2016).

These concerns in Orkney about regulation and political interference with fishing practices and consequent experienced loss of freedom correspond with findings by Williams (2008). In her research into the relation between industry

restructuring and fisher identities in Scotland, Williams, found that the perceived increase in legislation not only takes away enjoyment and demoralizes fishermen, it is experienced as a new risk. Fishermen find it increasingly difficult to adhere to complex legislation and experience it as a discouragement for investment and new entry. According to Ross (2015), external changes, for instance in legislation and marketing opportunities, which take undermine enjoyment in the business of fishing, should be considered as serious threats. She argues that part of the resilience of fishing comes from the passion fishermen have to endure the hardship of the occupation. This passion is related to ideals like self-reliance and freedom that have traditionally characterized fishing. When these ideals are undermined, fishermen can become less inclined to sustain this occupation and way of life in face of decline. Furthermore, stringent legislation limits fishermen's autonomy to be flexible and respond to uncertainty and change. As such, complex and perceived unjust regulation can pose a serious threat to the sector (Holmyard, 2007).

This disparity between (governmental) regulating bodies and fishermen is something which is found all over the UK. Reed, Courtney, Urquhart, and Ross (2013), refer to overall low levels of trust between fishermen and fisheries regulating bodies. They state this gap is often caused by perceived disparities between fishermen's knowledge and scientific evidence for fishing regulations. Moreover, they consider the general distrust and disagreement with politics and regulations to be part of the fisher culture. Complaining about these topics and using argumentation based on technical know-how are, according to these authors, expressions of the working-class culture of fishermen. It sets apart fishermen's experience and competence which is created through hard labor, from bureaucratic decision-making which is believed to take place behind desktops, far away from fishers' reality (Ross, 2015). The perceived lack of understanding of this fisher reality is cause for concern for Orkney's fisher community. I will elaborate on this in more detail below, but first I will describe the pilot marine spatial planning process as it took place for the Pentland Firth and Orkney Waters between 2010 and 2016.

4.2 THE PENTLAND FIRTH AND ORKNEY WATERS PILOT PLANNING PROCESS

As I already mentioned in the Introduction, the pilot MSP for the PFOW was developed in response to the unrest caused by the leasing of sea beds for marine renewable energy developments around the North coast of Scotland and the Orkney Islands. The potential of marine renewable developments in the PFOW area, in combination with existing marine uses was cause for concern for potential conflict which led to this guided policy process (Marine Scotland, 2016). The pilot MSP for the PFOW has been developed by the Pilot Pentland Firth and Orkney Waters Working Group, which consisted of policy makers from Marine Scotland, the Orkney Island Council and the Highland Council (Marine Scotland, 2012b). The planning process has roughly been divided into three phases: (1) the spatial planning framework phase, which was a scoping phase for data-gaps and the set-up of the planning process, initiated by Marine Scotland; (2) the research phase, in which research was (and continuous to be) conducted to fill knowledge gaps and support evidence-based policy-making; and (3) the planning process phase itself, led by the pilot PFOW working group. This planning process phase is visualized in Figure 5. Main objective of the pilot was to trail the marine spatial planning process and to provide a basis from which to further develop a statutory plan (Marine Scotland, 2016).

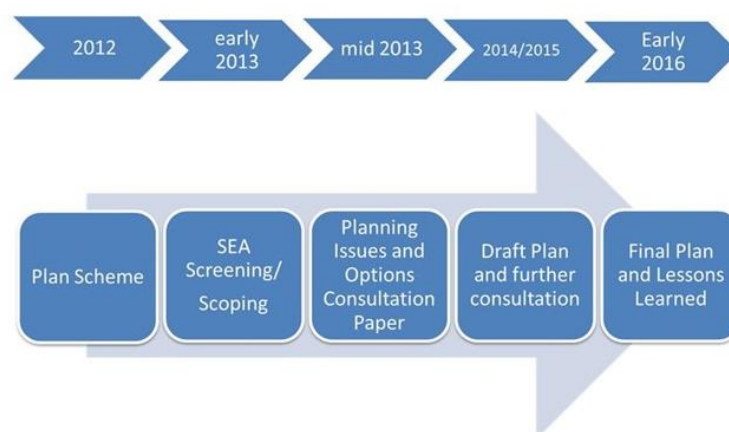


Figure 5 Planning process for the pilot marine spatial plan for the Pentland Firth and Orkney Waters

Source: The Scottish Government (2017b)

For the planning process, the plan scheme was needed to set-up a timeline and an outline for opportunities for public participation. At this stage, a database was developed with potential stakeholders for the PFOW area. In addition, the public was invited to enlist to this database, via press releases and document publications on Council websites. Some 250 organizations were included in the stakeholder database, and the database was updated throughout the planning process (Damien, October, 2016).

After the plan scheme followed another scoping period, in which data was gathered for the Planning Issues and Options Consultation Paper. This paper identifies policy areas of interest for the pilot plan. The planning issues and options phase was adopted based on land-based planning procedures and has been experienced as a valuable addition to the marine spatial planning process by the pilot PFOW working group (Marine Scotland, 2016; Damien, October, 2016; Wendy, November, 2016). The Planning Issues and Options Consultation Paper formed an important opportunity and stimulus for stakeholder engagement. Through consultation and engagement in the form of workshops and public participation events, stakeholders were invited to respond to identified planning issues for the pilot plan and to contribute relevant policy options (Marine Scotland, 2012b). Opportunities for participation were advertised via posters, websites, forums and local newspapers. The Orkney Fisheries Association, Orkney Sustainable Fisheries and Scottish fishermen's Federation all gave written feedback on this consultation (Pilot PFOW Working Group, 2013). In addition, two public events were organized during the consultation phase (one in Kirkwall, Orkney, and one in Thurso, Caithness) to enhance public awareness of the planning process and stimulated new stakeholders to come forward and be included in the stakeholder database (Damien, October, 2016). In Kirkwall, 5 out of 34 attendees of the workshop were members or representatives of fisher organizations in Orkney, and diverse suggestions were made to include fisheries' interest in the pilot plan (Pilot PFOW Working Group, 2013).

From the issues and options paper and its feedback a draft plan was derived, which was published in 2015. The draft was accessible in diverse locations such as the Scottish government website and public libraries in the PFOW area. Stakeholders were invited to digitally respond to the consultation between June and September 2015, a period in which diverse consultation events were organized as well. During these events, the public was further informed about the planning process and the draft pilot plan and were invited to give feedback and ask questions (Pilot PFOW Working Group, 2016). The Orkney Fisheries Association and Scottish Fishermen's Federation were among the 31 formal respondents to the consultation for the draft pilot plan (Orkney Fisheries Association, 2015; Scottish Fishermen's Federation, 2015). On an individual level, fishermen in Orkney did not submit written responses to the consultations, but some fishermen did attend the workshops or walk-in events set-up by the pilot PFOW working group (Personal communications, October, 2016).

After this final consultation phase, the working group finalized the pilot plan in 2016. At the moment, the pilot plan has been finalized and has even received a Scottish Partnership award for Quality in Planning and is nominated for a Planning Excellence award. The pilot is a non-statutory plan which means it can be used as guidance for development. Data produced in guidance of the plan can be accessed and the vision of the plan can be used as guidance for marine developers, planners and marine users. Its objectives and policies are thus not legally binding (Pilot PFOW Working Group, 2016).

Throughout the planning process, diverse opportunities for participation were thus created. These opportunities for participation ranged from informing to consultation. Although the working group made an effort to set-up and maintain a comprehensive list of stakeholders for participation, it was ultimately up to the stakeholders themselves to be involved and take advantage of participation opportunities (Damien, October, 2016; Wendy, November, 2016). One of the lessons learned of the working group was that consultation is more resource intensive than anticipated and that to ensure legitimate participation, more time, money and manpower is needed (Marine Scotland, 2016). Although initially fishermen in Orkney felt that as a group of stakeholders they were not included in the planning process, the OFA has played an important role as a representative body for fisheries in Orkney and has been involved in diverse consultations and workshops both in Orkney and on the mainland of Scotland. In order to ensure that fisher interests were properly represented in the pilot plan, being able to understand the planning process and objectives, planning discourse and underlying evidence on marine development was time consuming and challenging (Bella, September, 2016).

4.3 FISHERMEN'S INTERESTS IN MARINE SPATIAL PLANNING

Although the final pilot plan has been well received by policy makers, this overall content does not seem to be shared by the fisher sector in Orkney. When asked about their awareness or opinion of the pilot plan, most fishermen and representatives from fisher organizations responded with disregard. They feel the plan does not sufficiently cover their interest (Bella, September, 2016; Simon, October, 2016), fishermen have not been heard in the planning process (Chris,

October, 2016; Morris, October, 2016), the pilot plan does not offer a desirable solution to competition over marine space (Dennis, November, 2016; Simon, October, 2016) or they generally don't believe the plan will be of any influence on future marine developments (Chris, October, 2016; Dennis, November, 2016). In this paragraph I will go into the main interests of the inshore shellfish fisher community with regard to marine spatial planning in Orkney. I have grouped these interests into two main categories related to marine spatial planning: spatiality and power. Fishermen are first and foremost concerned with safeguarding their own livelihood; they want to protect their income, viability and rights. New developments that seem to pose a threat to these things are regarded with concern. The threat posed by marine spatial planning is two-fold. On a practical scale, spatial approaches to marine development will have real-life consequences for the use and future development of marine space around Orkney. On a procedural scale, the ability to influence the marine planning process will, among other things, depend on the power fisheries have in the governance process.

4.3.1 RENEGOTIATING SPATIALITY

As I mentioned in the Introduction, marine spatial planning is, as the name suggests, a tool to organize the use of sea space, and, consequently, spatial behavior in the marine environment. The fisher sector consumes marine space in a different manner than other marine users. To be more specific; fishing is a dynamic practice. Fishermen make user claims over wide areas of marine space but use and value these areas to different degrees. Not all the space used by fishermen is, for instance, active fishing space but large parts of this space are, for example, transit space. It is used as a passage to move from one marine area to another. Other parts of the space fishermen claim, are used as buffer zones. These areas are *safe zones* for gear when weather conditions get rough (Bella, September, 2016; Simon, October, 2016). In addition to these various uses of space, fishing practices are dynamic over time. Claims to sea space are thus not constant, but relative to seasons, tides, stock behavior and weather conditions. Furthermore, fishermen make claims on fish stocks and relevant ecosystems for these fish stocks. Breeding grounds for the stocks they target are equally important for catches as actual fishing grounds (Bella, September, 2016). Fisheries' spatial claims to marine areas are thus inherently different from spatial claims by *static* marine users. Marine renewable companies and aquaculture are examples of *static* marine users in the sense that they build relatively fixed constructions at sea. In addition to these constructions, these marine users also need transit space, but overall their presence in the marine environment is relatively visible and permanent compared to fisheries (Karen, October, 2016). Finally, where in the three-dimensional marine space (sea bed, water column or surface) fishing takes place, depends on the type of fishing concerned. Likewise, degrees of conflict or compatibility with other marine users depends on the type of fishing involved (Symes, 2005).

For fishermen to be able to get their interests heard in marine spatial planning negotiations, it is important that other stakeholders involved comprehend this complex and dynamic perception of marine space. As a representative from one of the fisher organizations in Orkney explained:

Because it is a terrestrial mind-set applied to the sea. For us, that is not good enough, in fact for us that is damaging. To have that mind-set perpetuate. [...] Fishermen fish, if you like, over very large areas, but not every part of that area is productive. So within those very large areas. There'll be a sweet of spots that they are fishing. So if you talk about spatial reduction, it can be the spatial reduction that interrupts their movement within that area, it could also be spatial reduction which removes one spot that is very productive from their sweet of spots, it might be one spot that they only fish at a certain part of the year, but that mix up an important part of their whole income. So terrestrial planning doesn't capture that. It is the opposite, it is destructive to the concept of how fishing works [...] It also takes no account of biological inputs in the sea. Because these don't regard lines on a map or any sorts of boundaries. But all these things which are a threat to our fishery are not accounted for in the marine spatial plan, they cannot be if you are only talking about space – one dimensional space. So for us it is incomplete and it cannot function properly until it takes on board all these elements of the three-dimensional dynamic marine world (Bella, September, 2016).

One of the main concerns with marine spatial planning, was that it would not be able to incorporate this dynamic character of marine space. A focus on static, terrestrial based planning for marine space could potentially lead to stringent allocation of space at the cost of fisheries' space to roam (Bella, September, 2016). This space is needed for fishermen to remain flexible in their day-to-day decision-making; to cope with risk, respond to changes in stock abundance, deal with competitors or to adjust to environmental changes (Bella, September, 2016; Morris, October, 2016). It is thus not surprising that initial concerns regarding the leasing of sea beds to marine renewables, and later announcements regarding marine spatial planning for the Pentland Firth and Orkney Waters were primarily about the potential loss of space.

Well yes, I would say, they [fishermen] are more concerned than anybody. Because they live on the sea for a job, and that's their life, fishing. Anything that goes in the sea, this renewable green, it's a concern. Because where is it going? If it's going on my ground, I have lost my ground. Obviously that is a big thing to think about (Dennis, November, 2016).

Just because fishing is dynamic in space, does thus not mean fisheries are not territorial (Symes, 2005). At the start of the planning process fishermen found it difficult to convince policymakers of their spatial claims. Particularly, it seems that fishermen have the reputation of being skeptic about new developments. This reputation led policymakers to feel like they were just objecting development objectives, for the sake of objecting, with little evidence to back their spatial claims. As one policymaker reflected on the pilot process:

We got very grudging praise from the fishermen which, when you get praise from a fisher organization that is pretty good going, because they never praise anything. So I mean, I think they still don't think it's what they want, but to be honest I don't think it ever will be. They just want to be able to fish wherever they want, but unfortunately when you are going to put anything in the sea, that is just not going to be possible (Wendy, November, 2016).

At the same time, fishermen feel that they have a relatively weak voice in marine governance. The perceived lack of understanding of the fishing way of life by policy makers puts the burden of proof on fisheries. To ensure that their interests are taken into account, fisheries need to find ways to get their voices heard: by speaking the language of planning and governance.

We won't [benefit]. Because capturing the amount of data that we require to proof that where we fish, proof where the fish are, proof where they spawn, proof how the tide works and the current works to bring in the feed, and how all these can be interrupted either spatially or biologically by other inputs is enormously complex. We don't have the resources to evidence all of that. And in a world where evidence is power, we have very little power (Bella, September, 2016).

The spatial dimension of planning implies that planning tools such as maps are used to express spatial claims and objectives (Tyldesley, 2004). It is thus not surprising that diverse mapping activities were undertaken during the research phase. Using GPS signals and an Orkney-wide questionnaire, the use of marine space by diverse users was mapped. Heat maps were, among others, developed to signal what areas were 'occupied' and what areas were 'open'. The creation of maps as a way to define space is an important tool to shape the discourse around marine development. Being able to understand and use this discourse, means being able to participate in planning negotiations. The creation and negotiation of this spatial discourse is thus an exercise of power in the governance process (Smith, 2015). For fishermen, propagating an understanding of their perception of space, is thus not only important to make their concerns and key interests known, it is also a way of gaining influence in decision-making processes. As such, fisheries' engagement with mapping and scoping spatiality in marine planning can be an opportunity to renegotiate the understanding of marine space in marine spatial planning discourse. In chapter seven, I will describe in what ways bridging social capital is used to generate science in support of fishers' interests and as a tool to gain power.

4.3.2 REPOSITIONING IN MARINE GOVERNANCE NEGOTIATIONS

The people you have there [in Marine Scotland] are people who are an arms-length from what is actually happening on the ground... it's left to the Association and individual federations such as the OFA to actually handle the case. So it's a bit like Goliath and David. Particularly since it's marine energy that is number one priority. So you really to a degree are fighting with your hands tight, as we have been so often (Adam, October, 2016).

With the spur of new marine developments around Orkney, mainly in the form of marine renewables and aquaculture, many fishermen feel threatened in their livelihoods. Their concern is that these new players are (presented to be) of an incomparable economic scale. The fear is that economic power equals political power in decision-making processes for the allocation and development of marine space. As the last decade has seen a steady decline in the size of the inshore shellfish sector, fishermen are concerned their sector will be overruled. There seems to be an overall feeling of being undervalued among fishermen. They sense that their concerns are not heard or dealt with properly, they feel that they need to defend themselves and they feel that other marine users have an unequal advantage in negotiations.

Nobody listens. The fishing community is so small, politically it doesn't matter. There is no... I don't know... The fishing industry has shrunk, it has gotten smaller and smaller and there is no political will to change it. Even so we are producers, so we do our plight for the country. And we are here every year, every month, we put all this food there, so we don't get any recognition for it (Morris, October, 2016).

Most of these feelings are based on past experiences with consultation, decision-making and protest. Every fisherman I've spoken to, had an anecdote of an objection made by the fisher community to a marine development not being heard or a consultation going without consequence.

You'll have to do what they tell you, doesn't matter how much you fight it. Nine times out of ten they want your opinion they go and fucking do whatever anyway, whatever I can make of it. They already have the decision made before they ask any fishermen. They just want to make a fishermen feel like he is being useful, but it never... Nine times out of ten they already have the decision made. [...] You already have the decision made so what is the point asking us fishermen? [...] What can change? Nothing really can change that is going to make fishermen have more say than somebody that is paying a bit more (Earl, November, 2016).

They feel that decision-making is largely based on economic arguments and interests. The socio-economic impact of fisheries around the islands is thereby overlooked or undervalued.

Like we work and we rely on our stuff locally... and that money me crew is local, we spend it in the local community, local companies rely on us to spend our money in the local community. So I believe we do more good than hell. So we do more good socially for the economy and we get little back. There is very little respect for the fishing industry by the harbor authority... from the council for the fishers (Morris, October, 2016).

Apart from the underestimation of the socio-economic value of fisheries, fishermen feel that people with decision-making power, in the Island Council and the national body Marine Scotland are too far detached from fisheries. They do not understand the way of life, the practices and the needs of the community.

A body like Marine Scotland can just go and change things. We are the ground troops, making a living. And they seem to just get up and change things. Even though things are put out for consultation. We don't feel part of that process. And in the end of the day, whatever they decide, they decide. There never seems to be anything sensible. Or what we believe is sensible. And that's the other things that I don't like. This organization that we basically pay for through taxes. I don't know how many folk work there, but what are they doing? And it's not just me, we all feel the same. We think, how about you try working for a living. Come out and do a real job. Get out and feel what it's like to make a real pound, they'd be in for a shock. To realize how hard it is in real life (Chris, October, 2016).

This kind of cynicism towards decision-making processes appears to have led to a fatigue among fishermen. They are pessimistic about their ability to exercise influence, especially when other financially stronger industries are at play. As one of the representatives from a fisher organization in Orkney put it:

By and large, if the renewables sector wants a site, they get a site. The whole consultancy process is pretty much a box they can exercise. So the fishing industry in losses are meaningless in that scale. That is our main experience in interacting with the planning system. So when it comes to yet another planning system which appears to favour renewables development, there is no surprise in them not wanting any part of it. They have told me, just have nothing to do with it. Don't bother responding. Because they are sick of it. This world of enabling renewable development and development of the marine space is carrying on, you know, in its own bubble, and fishing is carrying on. And they don't see that they have any meaningful interdependence. That is how their experiences have manifested itself. [...] It is so totally abstract and removed from their world. In their eyes, all that it is doing is threatening their livelihood more and every official document that has come in recent times to us has been a threat of some kind. And this is yet just another one of them. And it just exposes the sheer lack of understanding between the government and the planning mind-set of how fishing works. And really it just alienates them, because they are just going to do what they do and get on with it (Bella, September, 2016).

There thus seem to be legitimate concerns for the power fishermen have in marine governance negotiations. The perceived lack of power is based fishermen's lack of understanding of the policy process, and a perceived lack of understanding of other powerful players in marine governance regarding the fishers' way of life and spatial needs. Through various tactics, fisheries can reposition themselves as key stakeholders in marine governance negotiations. I will discuss the processes of reframing and reposition as they have taken place in Orkney in chapter six and seven. But

first, I will briefly elaborate on the institutional complexity involved in marine spatial planning. In the following paragraphs, I will give an overview of the different scales at which marine spatial planning takes shape. Although marine spatial planning is a tailored approach to marine governance, developed to suit regional context, this overview shows the policy foundations from which MSP has developed over the last years.

4.4 INSTITUTIONAL COMPLEXITY

The main institutional challenge that was voiced by respondents, was the complexity of marine governance in Scotland and the UK. Literature reviews have shown that marine spatial planning is a complex matter from a legal, planning and practical perspective. In the theoretical framework, I described the plurality of legislation, space and use which complicates this kind of planning. For Orkney, legal complexity comes from the layers of devolved and centralized power involved in marine planning. As governance takes place across scales, participation in governance processes can also take place at different institutional scales. The complexity of decision-making and power in marine planning undermines the ability of stakeholders to participate and can thus undermine legitimacy of marine planning. In this paragraph, I will give a brief overview of the institutional complexity involved in marine spatial planning in Orkney.

The Orkney Islands Council is a devolved power under the Scottish Parliament, which is one of the National Powers under the United Kingdom of Great Britain. At the time of research, the UK was part of the European Union which has set EU-wide guidelines and policies for marine development. In this paragraph, I will give a brief overview of the international, national and regional scales at which marine spatial planning takes shape.

The Orkney Islands Council is responsible for public services on the Orkney archipelago in line with existing Scottish, UK and EU legislation. The Council is one of the 32 local councils operating in Scotland as part of the devolved Scottish governmental administration. The Scottish parliament has devolved law-making powers on certain policy topics, such as fisheries and the environment, while the UK government retains reserved power over national topics, such as energy and foreign policy. Both on International, EU, UK and Scottish level, marine spatial planning has been adopted as a tool for marine governance. Here, I will give a brief overview of these different institutional levels and the way they relate to local level marine spatial planning projects.

4.4.1 INTERNATIONAL SCALE

UK marine policy is developed within an international, European and national framework, which describes national objectives, poses constraints on policy actions and provides guidelines for planning and management. UK marine planning is for instance influenced by international conventions on (marine) ecosystem protection and management and international environmental law, conventions that regulate international use of marine space and sector-based agreements. Examples are the Convention for the Protection of the Marine Environment of the North East Atlantic, which includes all UK waters, the United Nations Convention Biological Biodiversity and the UN convention on the Law of the Sea (UNCLOS, 1994), International Maritime Organization conventions on international shipping, the UN Fish Stocks Agreement, 1995 and the FAO Code of Conduct for Responsible Fisheries (Defra, 2005; Douvère & Ehler, 2009).

On a European Union level, marine spatial planning is actively promoted as a marine governance tool for EU coast member states, among others through the European Commission (Jay, 2010). The EU Marine Strategy Framework Directive (MSFD) 2008, has been a key driver for marine spatial planning. This legislative framework describes good environmental status descriptors for the regulation and protection of marine biodiversity (Scarff et al., 2015). It is an ecosystem-based approach to the management of human activities in the marine space (Marine Scotland, 2016). The MSFD was preceded by the 2007 EU Green Paper for the Future of Maritime Policy, which adopted marine spatial planning as a cornerstone for efficient maritime policy and sustainable marine development (Douvère & Ehler, 2009). In 2008, the European Commission also introduced a roadmap for marine spatial planning, which added the growth potential of maritime economies to the environmental advantages of integrated marine planning (Zervaki, 2015). In 2014, the EU released a Directive for a framework for marine spatial planning, which mandates the development of national marine spatial plans for EU coastal states (Marine Scotland, 2016; Smith, 2015). The PFOW pilot plan has been developed in accordance with these regulations, as well as with the EU Water Framework Directive, Common Fisheries Policy, Habitats Directive and Birds Directive (Pilot PFOW Working Group, 2016).

During the development of the pilot MSP for the PFOW, the UK was part of the European Union which also has specific institutional guidelines for marine governance. However, with the acceptance of the UK referendum for withdrawal from the EU, there is a lot of uncertainty regarding future legislation. Although national policy priorities will remain in place, it is still unclear to what extent EU directives will remain applicable to the UK.

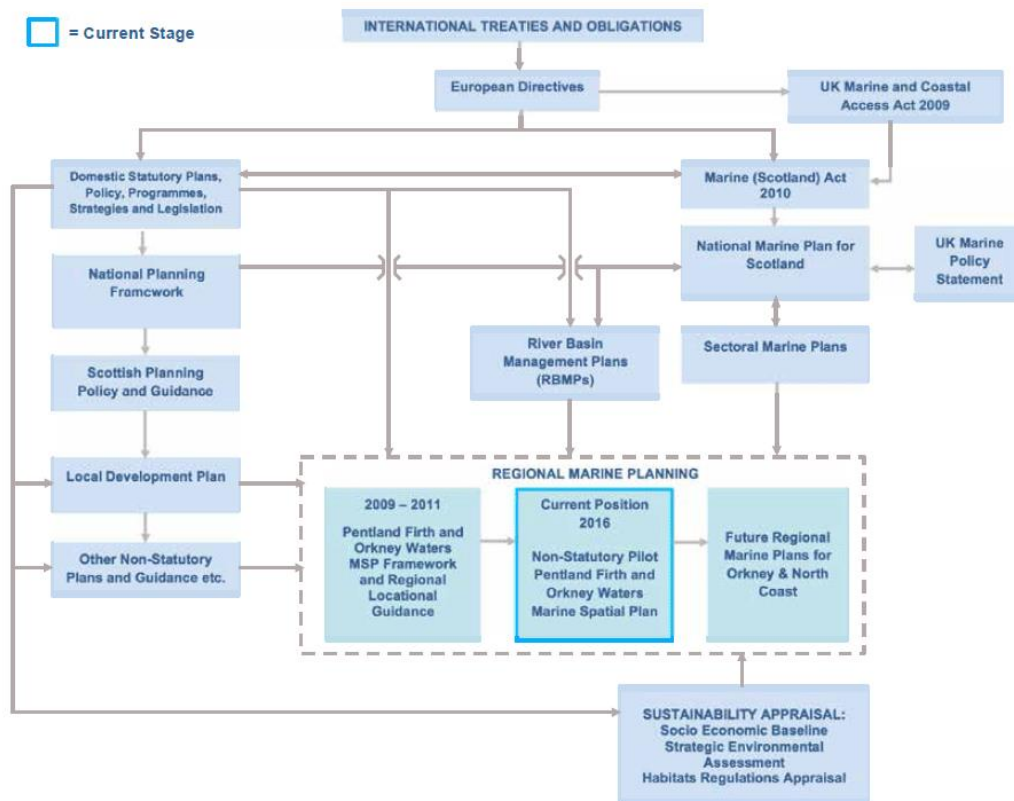


Figure 6 Legislative context to pilot marine spatial plan for the Pentland Firth and Orkney Waters

Source: Pilot PFOW Working Group (2016, p. 17)

4.4.2 NATIONAL SCALE

These national policy priorities are described in the UK Marine Policy Statement. This statement describes a vision for the UK marine environment, including policy priorities and a marine planning framework, which prioritizes sustainable maritime development on a national basis. The Scottish National Marine Plan and local-level plans all adhere to this overarching UK vision. The Scottish National Marine Plan, in turn, is a product of the Marine (Scotland) Act 2010, which sets-out a national statutory framework for planning, licensing and conservation. The Scottish National Marine Plan specifies the national policy strategy for the sustainable use of marine resources in both inshore and offshore waters. (Pilot PFOW Working Group, 2016; Smith, 2015).

However, as became painfully clear with the controversy around the leasing of Orcadian sea beds by the UK Crown Estate, regulating authority related to the sea is still largely centralized in the UK. The Crown Estate manages property rights over the UK territory, including Scotland. As such, the Crown Estate can lease its property for the economic benefit of the UK Treasury. This lack of local ownership over marine space means there is a lack of local accountability and control over maritime exploitation, especially because the Crown Estate is not a planning authority (Tyldesley, 2004; Orcadian 08-04-10, p.1). To address this, among other things, the Orkney Islands, Shetland Islands and Western Isles have joined in the 'Our Islands Our Future' campaign, with the aspiration to receive more delegated powers on the local level. One of their main objectives is local control over the sea beds around the islands (Damien, October, 2016). For marine planning purposes, planning authority will be delegated to the regional Marine Planning Partnerships, but licensing and leasing authority will remain reserved for existing regulating bodies, such as Marine Scotland.

4.4.3 REGIONAL SCALE

As is prescribed in the Scottish National Marine Plan, local Marine Planning Partnerships will be set-up for the 11 Marine Regions of Scotland, to take forward local marine spatial planning for that region (Damien, October, 2016). The idea behind regional marine plans is that they will tailor to local circumstances with inclusion of local stakeholders. By setting up local partnerships, the gap between national government and local communities can be bridged (Marine Scotland, 2016). Marine Planning Partnerships (MPP) can vary in form and size, depending on the local context. These partnerships will be a collaboration between local authorities, representative organizations and Inshore Fisheries Groups (IFGs). In Orkney, this partnership is still to be set-up but it will be led by the Orkney Islands Council (Damien, October, 2016; Wendy, November, 2016). Inshore Fisheries Groups are a new structure in Scotland, initiated by Marine Scotland as a formal representative body for inshore fisheries in marine spatial planning. As the inshore fishing industry is a key stakeholder in marine governance and the National Marine Plan demands inclusiveness in the planning process, the IFGs should allow fishermen to engage regional marine spatial planning through the MPPs. For Orkney, the Inshore Fisheries Group is Orkney Sustainable Fisheries (The Scottish Government, 2016).

4.5 CONCLUSION

The leasing of sea bed around Orkney by the Crown Estate, and the following discontent, in 2010 offset an interesting initiative to pilot marine spatial planning for the Pentland Firth and Orkney Waters. Between 2010 and 2016, a working group, consisting of the Orkney Island Council, the Highland Council and Marine Scotland, developed a non-statutory policy guideline for the future development of this marine area. The process allowed for different forms of participation, ranging from informing to consultation. The inshore shellfish fisher community of Orkney was mainly involved through the formal representational bodies of the Orkney Fishermen's Society and the Orkney Fisheries Association. The primary concerns fishermen expressed in response to the MSP process, related to loss of access to marine space and adverse impacts on their livelihoods. I have categorized the concerns of the community into two main themes: spatiality and power.

Objective of marine spatial planning is to come to a shared vision for marine development. In order to do so, activities in marine spaces are mapped to minimize conflict. Fisheries' have specific spatial requirements, related to the mobile and dynamic nature of fishing. For fisheries to get their interests heard, it is thus essential to create an understanding of their perception of marine space and to incorporate this perception into marine spatial planning discourse and planning.

Fishermen in Orkney are highly concerned that they are a weak party in marine governance negotiations. Their perceived lack of influence on marine governance processes is experienced as threatening. In the following chapter, I will discuss what ways the inshore fisher community has addressed these two concerns and what role social capital has played and could potentially play in this regard.

5. ORKNEY'S INSHORE SHELLFISH FISHER COMMUNITY

Well fishing has... it is so tremendously socially, culturally important to communities like this. In Orkney, it's a lot of money but it's not a huge amount of money. And it employs 300 people perhaps. But, it's so much more than that, you know. But it's about establishing that link. What is it that makes fisheries so politically a tinderbox? There are arguments about our waters and our fish, our fishermen, our boats and what have you. It runs right through society. This rather dangerous, difficult occupation, which is not all that economically viable. But runs so deep, even though people who have never even seen the sea. It's our fisheries, it's our waters. For the fisherman themselves, it is something that is available, isn't it. If they've got the right license and they've got the boats and they've got the money they can go out and catch the fish and sell them. There is that sort of freedom to hunt and be your own boss (Karen, October, 2016).

This quote sums up nicely some of the key characteristics of the inshore fisher community. Beyond its economic and occupational contribution to society, there is social and cultural importance of this sector for those out at sea, but also for the island communities as a whole. As the Theoretical Framework has shown, community resilience theory assumes that communities possess distinct community assets which can be mobilized through the exercise of agency to actively engage with and initiate change in favor of community resilience (Magis, 2010). In this chapter I will discuss some examples of community assets which are present in the Orkney inshore shellfish fisher community. I will show how these assets interact with one another and how these assets are used to strengthen the position of the community. In the second paragraph I will show how community social capital in the form of community norms and values shape the community identity, how these norms and values are reproduced through socialization and how these forms of social capital, in the context of current social changes, relate to community cohesion. I will argue that bonding social capital is central for the creation of social cohesion, which in turn can play an important role in strengthening the position of the inshore shellfish fisher community in marine governance negotiations.



5.1 COMMUNITY ASSETS

In order to cope with changes, the community itself adjusts to new circumstances and as such, it transforms over time (Magis, 2010). This is a continuous process, and is for instance reflected in modernization, social (re-)organization and spatial adjustment measures adopted by the community. However, availability of these coping mechanisms and ability to use them depends on the community assets present within the community. In the theoretical framework, I described community assets as resources which are available within a community, which can be identified and mobilized to engage with or induce change to drive development and strengthen resilience (Bebbington, 1999; Magis, 2010; Mathie & Cunningham, 2005). There are seven community assets: natural, human, cultural, political, financial, produced and social capital (Magis, 2010). In this paragraph I will give a few examples of the community assets present within the shellfish fisher community and the ways in which the community builds upon these assets to strengthen community resilience.

First of all, and perhaps most evidently, the fisher community evolves around the natural capital available; namely the sea scape, fish stocks, breeding and fishing grounds for shellfish species and the ecosystems that support these natural assets. Orkney's geographic position and natural environment create the perfect conditions for high quality shellfish species, but at the same time poses challenges for the fishing sector. Not only are fishermen for their returns highly dependent on weather conditions and vulnerable for climatic changes, they also need to deal with relatively high transportation costs to account for their isolation from direct markets. Onshore businesses, such as the co-operative processing facilities in Stromness and Westray, are thus important resources to local fisheries as they contribute to the quality of Orcadian produce in the market (Linkie, 2016a; Marine Scotland Science, 2014). The processing facilities are examples of produced community assets as they are part of the infrastructures available to the community (Magis, 2010). The processing facility in Stromness is run by the Orkney Fishermen's Society and is the second biggest employer

in Stromness. The processing factory buys crab off local fishermen, most of whom are small scale inshore fishermen. In these factories, crab meat is processed and marketed for UK and international markets (Linkie, 2016b). In Westray, the processing facility is owned by shareholders from the island, mainly fishermen who land into the factory. The factory is an important employer for the island, but also ensures fishing around Westray and the Northern Orkney Islands remains viable (personal communications, November, 2016).

If we don't have that factory up there, we have no place to land. Stromness can't handle any more landing in there. And it costs us a lot of money to get our crab in there. Because we pay 10p a kilo to get them from here to Kirkwall. And then you have to get all your stuff back and that's another 5p. So it's a good 15p to get your stuff there and get your boxes back. [...] It's not worth your while [to land in Kirkwall or Stromness] every day. It would be seven or eight hours steaming every day. It is 3.5 hours from here to Kirkwall and then back, plus the distance you'd have to steam to the fishing grounds. So basically you would be fishing one day, landing one day and then you'd be going back out, so you could be out 5 days if you don't bother sleeping. [...] It would just mean everybody would have to buy bigger boats so that you could keep more crab on board before you go in to land. If you want a bigger boat you'll need 1 million quid. It's a slight difference between 170 and 1 million. And it's not even your boat you have to worry about, you have to buy at least 200/300 thousand pounds worth of creel to make it worth your while, so a lot of money (Earl, November, 2016).

The processing facilities are thus essential for the survival of small scale fishing around Orkney. Furthermore, there is a trickle down of economic value from the inshore fisheries to the island economy through the processing factories (Marine Scotland Science, 2015). In 2011, for instance, the 2.5 million pounds worth of catch contributed to 10.4 million pounds in sales of diverse fish products. Employment in the regional fishing industry increases household incomes and expenditures which further benefits the local economy. Furthermore, the processing facilities require additional infrastructures such as haulage and ferries for export. (Marine Scotland Science, 2014). These examples of produced capital thus contribute to financial capital both inside and beyond the fisher community. The community is highly dependent on its economic or financial capital, for its commercial viability. It allows for investments to be made in, for instance, gear, vessels, licenses, training and marketing. Through these investments financial capital is thus used to build and expand, among others, on human capital, in the form of knowledge and skills.

Another example of produced community assets are shared harbor facilities. The harbors and piers provide shelter in bad weather conditions, but are also a central infrastructure for landing catches, mending gear and re-fueling fishing vessels. In Kirkwall, for example, members of the Orkney Fisheries Association co-rent a large shed for storage and mending of gear. The Orkney Fisheries Association has also set-up a shared fuel tank system, whereby fishermen can easily tank fuel at the harbors. This system saves fishermen a lot of time and thus money (Bella, September, 2016; Morris, November, 2016; Tom, October, 2016). A final example of produced capital within the community are the lobster hatcheries. To accommodate concerns for stock depletion and long term sustainability of fisheries around the Orkney Islands, there are multiple hatcheries that help replenish shellfish stocks. As such, the hatcheries try to contribute to the natural capital available to the community.

As the policy-makers I have interviewed noted, the Orkney shellfish fisher community sets itself apart from many other fisher communities, in that it is relatively well organized (Damien, October, 2016). The community has multiple organizations which formally represent their members or the sector as a whole when it comes to management, governance and marketing. Furthermore, as the section above shows, the organizations provide the community with diverse resources to strengthen their resilience. The fisher organizations themselves can be seen as outcomes or expressions of social capital. They are based on social networks which exist within the community and come forwards out of the shared community interests and objectives, which, as I will describe in chapter five, are related to bonding social capital. The fisher organizations also contribute to human capital, through the dissemination and production of knowledge and by offering access to courses for fishermen. Furthermore, the organizations contribute of the community's political capital by formally representing the fisher community in governance processes. I will further reflect on this latter function in chapter six.

The fisher association is a good thing because it builds up a lot of good dialog between fishermen. When we meet we always talk about a lot of things. We are obviously trying to move our fisheries forwards and try to make it better for everyone else who is trying to come in to the fishery. It means that we have, sometimes they are pretty positive, a lot of folk with good ideas (Tom, October, 2016).

Fisheries' research is an important tool to ensure the long term sustainability of inshore fisheries. Research contributes to the creation and dissemination of knowledge and discourse through and beyond the community and contributes to

human capital within the community. In Orkney, fisheries' research is set-up by the Orkney Sustainable Fisheries organization (OSF), Orkney's Fishermen's Society (OFS) and Orkney Fisheries Association (OFA), in collaboration with diverse universities and research institutes in Orkney, Scotland and internationally (Bella, September, 2016). This research is related to multiple aspects of the fishing sector; the spatial allocation and spatial dynamics of fishing, the socio-economic and ecological impact of fishing, fish stock and ecosystem assessments and the interaction between (and potential compatibility of) fisheries and other marine users (Karen, October, 2016; Norman, November, 2016; Simon, October, 2016).

Fishermen in Orkney are getting better prices than fisherman's elsewhere. Given that we are further from the market the opposite should be the case; fisherman here should be given lower prices and one of the reasons that we are getting better prices is that we have a fisheries improvement project in place. We've got our own research, we are demonstrating sustainability of the stocks, we are demonstrating good management, we are engaging with the retail sector and consumers and that has helped us to drive up prices. [...] In terms of informing local management; if we want our fisher community to be empowered and to take responsible decisions about themselves they need to have a justification for doing that and the justification for doing that is robust local science collected by scientists who are working with fishermen in Orkney (Simon, October, 2016).

The benefit of fisheries' science is thus two-fold. On the one hand it contributes to human capital and as such to sustainable practices in fisheries which contributes to the natural capital available to the community, in the form of healthy and high quality fish stocks and ecosystems. On the other hand, it informs and legitimizes decision-making for fisheries' management and marine governance, thereby contributing to the political capital of the community. Through fisheries' improvement projects based on fisheries' science, fishermen are able to connect to new markets and get better prices for their catches. Indirectly, these improvements thus also contribute to the financial capital of the community. Apart from many potential benefits, research, however, also brings costs for participating fishermen. Fisheries' improvement, management and science require financial investments, as well as investments of time and energy from fishermen, which could otherwise have been invested in their work.

What we see is a certain amount of science needs to be done. But at the end of the day we are fishing, we make a living, we are paying mortgages, we are paying for our kids, you need to get better boats, we can't just keep always involved in science and science and science. Even where you are coming from. There has got to be some kind of balance, it is not the most important thing for us. The most important thing for us is fishing (Chris, October, 2016).

There is thus a constant interaction between different community assets. Adding to one community asset may require investments from other forms of community capital. The asset-base of a community is thus dynamic. In dealing with changes, community members make trade-offs between different community assets. Some are further developed, some are used or even depleted and some are neglected while new assets may be acquired (Bebbington, 1999). By accessing community assets, these assets can be strengthened and new assets can be developed (Magis, 2010). In the next paragraph I will zoom in on the function of social capital for community cohesion and resilience.

5.2 ORKNEY'S INSHORE SHELLFISH FISHER COMMUNITY'S BONDING SOCIAL CAPITAL

As I described in the Theoretical Framework, Social capital refers to the practices, values and sets of norms that exist and are co-produced within the network, which can contribute to the collaboration, functioning and collective action of the network (Lehtonen, 2004; Rydin & Holman, 2004). In this paragraph, I will describe some of the norms and values of the inshore shellfish fisher community as described by respondents, which help define the (symbolic) boundaries of the community. I will describe how these values and social practices form that basis of bonding social capital and contribute to community cohesion, which allows the community to collaborate to reach community objectives.

5.2.1 COMMUNITY VALUES

In this paragraph I will give some examples of values expressed within the Orkney inshore shellfish fisher community, which are important for the community identity. The sense of identity creates a feeling of belonging which can be an important coping mechanism in times of hardship while community values describe ideals for community improvement and development.

As I mentioned in the Introduction, UK MMO research has shown that fishing exceeds its occupational character and is considered as a way of life. Fishermen derive a sense of identity from working at sea. Values such as independence, self-sufficiency and accomplishment are important aspects of this identity and contribute to a sense of pride and belonging (MMO, 2014). Community values are produced through social interaction and are an expression of a shared understanding of reality, which has been developed over time (Hendrix, 2005). Furthermore, cultural values are a tool to express similarity within the community. Those who uphold community values are insiders, whereas those who do not share in these values or the desired expression of these values (norms) can be viewed as *outsiders* (Jager et al., 2014). In some cases, practices that undermine or go against community norms and values, can even have corrosive effects to the community through conflict and distrust (Jamieson, 2009). One expression of community values is the work ethics fishermen in Orkney uphold. Fishermen see themselves as self-made men. To thrive under the hard working conditions at sea requires skills, knowledge and a strong working mentality. Key characteristic of this line of work is that you reap the benefits of your own hard work. Being successful is thus a direct outcome of your own investment and resourcefulness.

There is that many jobs that you get paid a good amount of money doing nothing. A month here, a month there. Everybody wants his time off. But that's not really like... no I was never really brought up that way. You'll get time off when you are dead (Earl, November, 2016).

The fishing industry has always been a physically and mentally challenging occupation in a sometimes harsh environment with a huge number of variables and added pressures to produce products at a competitive rates. So with all this in mind, fishing as a career or job may not appeal to many people as there are many other easier jobs available in the marine industry (Tom, October, 2016).

This relates to what Reed et al. (2013), refer to as a "working class masculine occupational culture". In their research on six fisher communities in the UK, the authors found that fishermen that thrive in this sector, are men who have know-how and perseverance. The occupational culture they describe idealizes skill, knowledge and courage. "Fishermen have used the determination required for their occupation to survive the decline of the industry – survival against the odds is an affirmation of the fisherman's identity" (p.7). As such, being resilient is in itself a central feature of the fisher identity. True fishermen are thus fishermen who are able to sustain themselves and their families despite occupational hardships (Ross, 2015).

A second central value of fishermen in the UK and Scotland (and related to the first), is autonomy (MMO, 2014; Williams, 2008). As the above shows, successful fishermen are self-reliant. They are expected to be able to make independent decisions and manage their own business. In the case of Orkney, the value of autonomy seems to be related to a wider island-identity. Islanders and fishermen seem to have in common that they need to be able to fend for themselves. As a representative from one of the fisher organizations explained; the islanders historically always needed to be independent and self-sufficient. This cultural characteristic can be recognized in fishermen's high attachment to independence.

Sometimes fishermen keep themselves to themselves and they don't really talk about political stuff... and I can see why. I have respect for that. They are happy enough to do that, that is fine. Most of the fishermen are quite independent, they fend for themselves and they look after themselves, look after their families... They don't expect to be handed service, don't expect others to do stuff for them, they just work and look after themselves. That's it (Morris, October, 2016).

Shared norms and values contribute to the sense of similarity within the community (Jager et al., 2014). One thing that the fishermen I have spoken to seem to have in common is their love for the sea and the fishing way of life. Fishing is hard work, under challenging conditions, with a lot of risk and uncertainty. Yet, when you are skilled there is the possibility to make good money. What all respondent emphasized, however, is that skill alone is not enough. It takes a certain kind of person, it seems, to thrive in the fishing sector. Your heart need to be in it for you to be able to last.

I used to go down to sea when I was very young, it has always had an attraction on me... I don't know why but there it is, can't really explain. Past generations went to sea... Various ones of my ancestors sailed and were on boats, were going fishing all that stuff. [...] Going to sea is a thing that is either in you or not. It is a strange attraction. It is something that, if you go to sea in any form... sailing, fishing boat, angler fish, diving... it's either in you or it's not. If it's not for you, don't go. [...] Sometimes you can just look up at the sky and it's as good as anything, but there it is. We get caught up sometimes. I don't know. Sometimes you feel tired of it, you could do something else. But you

always get... you are always a part of the sea. One of my first memories was with the sea around. At the boat with the creels. Sailing with my grandfather. Any time I would come out of school, I would go home and spend time at the boats. Nothing else seemed to matter. You feel quite at home I think (Morris, October, 2016).

What I do, in my way of life, like I said it's not just a living, it's a way of life. And it is everything. And it is to all the lads that normally work in fishing. [...] Now, you could really see yourself doing something else and making money. What you find now, most of the lads are enjoying themselves and they are enjoying the job, they are not in it for the money (Chris, October, 2016).

What ties fishermen together is thus a shared understanding of the hardship of their occupation. They understand their shared passion for the sea, the challenges they cope with on a daily basis and the working mentality necessary to thrive in this business. Through this shared understanding, fishermen can obtain a sense of belonging and security. An important function of communities is providing emotional support to its members. This function helps members to cope with challenges (Hendrix, 2005). Furthermore, it is an important function for the fisher community as a whole as it allows the community to endure and cope with changes.

Communities of the mind in fishing communities in Scotland revolve around shared feelings of empathy and compassion for a particular way of life characterized by uncertainty, risk and hardship [...] A sense of community solidarity would seem to play a significant role in coping with this way of life [...] It would appear that interpersonal closeness results between people who share the same elements of hardship, uncertainty and physical danger in their occupation (Ross, 2015, p.314).

A final important value that was expressed during the interviews was sustainability. When asked about the future of the community, many fishermen talked about a need for sustainable practices in fishing. Although not all fishermen seemed equally convinced that declining stocks or changes to ecosystems were an actual problem (Personal communications, November, 2016), most seemed to consider protection of the quality fishing grounds to be an important measure for long term viability of the sector.

I think we are reasonable people. We provide for our families. Our *bairns* [children] go to school. We buy our stuff in the local shops. We feed science, we look at science, we help science. That's the thing that we do. And we try to leave the planet better than we found it, that is all that we ask. All the local fishermen are probably the same. We are not here to empty the sea of fish. Because there is no tomorrow then. We have to leave more fish for the families, the children, and their children. You have got to look at what they do. You can't be detrimental to that (Morris, October, 2016).

It is something that have been led from the bottom up, from us the fishermen, we want the size up. Basically everybody does around here. We want the fisheries better. We want to catch bigger stuff, we want to make more money, and we want it every year. We want sustainability, we are not paying lip service to it. We actually want it because it will make us more money in our pockets (Chris, October, 2016).

This concern for long term sustainability was also one of the topics in which Orcadians distinct themselves from foreign and large scale fishing. The feeling seems to be that members of the community have a heart for the sea and are willing to invest in the viability of the community as a whole, beyond their own income. Outsiders to the community, however, have a different mentality; they are focused on making money and less inclined to invest in the community (Sander, October, 2016).

They just doing it for the money... They will just object anything if it affects the pound in their pocket. They cannot see a year, 5 years, 10 years down the line. They only think about next week, they think about how much money they will make next week. You have to get past that kind of mentality. I don't even know the fellows, that type of folk. [...] But if you can see beyond that, and you can see the long term to make things truly sustainable, have it just good for everybody. It may be hard in the short term but in the long term it might be better. But everybody has just different feelings on that (Chris, October, 2016).

To ensure this ecosystem is preserved for future generations of fishermen, it is important the community as a whole invests in sustainable practices. This is being done by bottom-up initiatives for larger landing sizes, which allow the stock to grow and reproduce before it is being harvested and communal investments in gear, hatcheries and research. Investments in sustainable fisheries, for instance through increased landing sized, require short term investments for long term gains for the community. Although not all fishermen are equally thrilled about environmental measures, most

people I've spoken to seem to uphold a communal value that sustainability is in the interest of the community as a whole and a virtue of a *good fisherman*.

5.2.2 SOCIALIZATION

Community norms and values thus contribute to a shared sense of identity which helps ensure the long term sustainability or resilience of the community. By passing these norms and values on to new generations, desired behavior of community members continues to be stimulated. It is thus an important process to ensure that the community continues to move forward on the desired path. This process, through which people are taught to perform socially desired behavior in line with group norms and values, is called socialization. The process of socialization is not always a formal one, but is more often a subconscious learning process which can contribute to feelings of security and inclusion (Hendrix, 2005). In case of fisher crew, for instance, young crew are taught fisher practices, informal rules and discourses used by fishermen. As such they are taught how to be a member of the fisher community (Williams, 2008). Socialization is thus an interactional process through which knowledge, skills, norms and values are taught to shape the character (or social role) and behavior of a member of a social group. On the one hand, new generations or community members thus learn to identify with the existing culture through socialization. On the other hand, socialization helps them to become accepted within the community (Jager et al., 2014). In Orkney, socialization practices are felt to be under stress as the social composition of the fishery changes.

In Orkney, new entry would traditionally start their working experience aboard a vessel of an experienced fisherman. Through learning-by-doing, they would discover who was suited for the work and who was not. Those not suited for the job would not be able to cope with harsh working conditions or would change their occupation because they wouldn't be able to make a living. One of the fishermen I interviewed described how he would know after two days if his new crew were suited or not. The moment they said they were going below deck for a while, he knew they wouldn't be able to handle the sea (Earl, November, 2016). As a young crewmember you gain experience and get the opportunity to gradually work yourself up in the business. All the more experienced fishermen I spoke with started out on *dingies*: small one-person vessels. When they proved to be capable of running their own boat, they would gradually be able to size up and expand their business, while some returned to the *dingy* at a higher age.

Gradually you come in to it. Some will drop away, they are not suited. They will come into it but they cannot make a living. Some will stay for years and years. [...] When I take the fishers diving, they will start diving, and after some time they will have their own boats. And you'll dive with them on their boat. It's sort of a progression, it has always been like that. [...] I've had one lad with me for 8 or 9 years and I've seen he was crap when he started, he was rubbish. And now he is getting a good idea to find the scallops on the bottom, to get to know the tides, what kind of weather you can operate in. There is progression. And at some time he might think he could have my boat. By that time I might think I will try something different and I could possibly sell my boat to him (Chris, October, 2016).

You learn as you go. I teach anybody who comes to work with, I teach them all about sustainability, why the minimum size is set as it is. So it's an education for them... something they never even thought about, so you try, mostly young fellows, most of the skippers are the same. They try to teach them through the work (Morris, October, 2016).

These quotes show that socialization not only functions as a learning stage, but also as a selection stage. When new crew proved to be unsuited, the working period onboard with other fishermen was an opportunity to filter these people out. They would not become a part of the fisher community.

Although the above described values and socialization practices remain important, respondents signal changes in the fisheries around Orkney, that are starting to affect the community. Over the last years, there has been an increase of foreign vessels and foreign crew on larger vessels throughout the UK and Scotland (Jamieson, Munro, & Perrier, 2009; Williams, 2008). In Orkney, this increase of foreign fishermen has also been noticed. Although opinions on these developments are diverse, the overall consensus seems to be that these foreign fishermen are *outsiders* to the community. As perceived similarity in norms and values among fishermen strengthens the community identity, it simultaneously functions as a distinction from non-members of the community. Many fishermen feel that these foreign fishermen do not share the same values and practices as Orcadians and do not contribute the same to the islands' communities. An example of an often voiced concern is that foreign fishers are just in it for the money. The premise is that they want to profit from the high quality and quantity fish stocks around Orkney, but are less interested in long term investments in the industry or in getting involved in fisheries' improvement (Sander, October, 2016). While fishermen often emphasize the value of their community beyond its economic impact, these outsiders are depicted as not being part of this socio-cultural side of the community. The following quote clearly shows this perceived distinction

between *real* fishermen who are part of the community, and outsiders, who uphold different interests and do not behave according to community norms.

Industrial fishers for scallops, they don't want to see the size go up. Because it's all businessmen. It's basically not fishermen. Its businessmen who own boats (Chris, October, 2016).

One of the reasons for this perceived distinction, could be that these foreign fishermen have not gone through the traditional socialization process described above. With modern technology it is possible to get on in fishing without the extensive traditional knowledge of the weather and the sea. Experienced fishermen have found *sweet spots* for fishing through trial and error. Although these sweet spots are no guarantee for good catches, it is relatively easy for new vessels to use GPS to follow other fishermen to good fishing grounds. Whereas the traditional socialization process would filter out people who were not suited or not wanted in the sector, respondents feel that now anybody with money can come into the business. There is thus a lack of social control over new entry.

When we started there wasn't really any GPS or anything like that. So you'd try out by trial and error, and you'd use land marks. You had to use skill. Now with plotter and GPS and everything, any monkey can just come by and press a button and then it's in the system. Then they know where you are fishing. It is too easy. [...] Some of them are just useless at it, they never would have made a living in it. [...] That is how them just get a boat and start fishing. There is not the process where they first have to get themselves on a boat and learn the spots. Now they can just think, oh he is diving. And then steam past you, press the button and then they've got your spot. That's how they do it. [...] The ones that are fishing now, we would never have had them. They are from a completely different country, they never would have gotten through the system (Chris, October, 2016).

In the long term, this lack of social control can be damaging to the sector as a whole as it undermines social cohesion and thereby the ability of the community to collaborate and ensure the long term resilience of the community (Urquhart et al., 2011), as I will discuss in more detail below.

5.2.3 BONDING SOCIAL CAPITAL IN ORKNEY

Social cohesion is thus influenced by a sense of similarity among community members, which is, among others, created through distinction from outsiders of the community. Community values and traditional practices are important aspects of what defines a community and adhering to these norm and values can contribute to community cohesion through a trust that is created in the morality of the community. This is what Grafton (2005), refers to as bonding. Bonding is a form of social capital through which individuals within a social group knit together. For social groups to work towards community objectives, trust and reciprocity are essential. For individuals to invest in these objectives, they need to reassurance that others in the group will do the same. Bonding is thus about the *willingness* to participate in community activities and to contribute to community objectives for development (Cloete, 2014; Magis, 2010). Bonding can take place thanks to social capitals like shared norms and values which can create trust, and at the same time the strong internal relations that result from bonding strengthen social capitals such as the shared community identity (Rutten et al., 2010). Bonding can thus be seen as the *glue* that strengthens internal relations in a community (Rydin & Holman, 2004) through which collaboration can take place. In other words, bonding can motivate individuals to choose community interests over personal gain (Grafton, 2005). As such, bonding social capital strengthens community cohesion (Magis, 2010). Social cohesion thus depends on social structures or relations in a group and is produced through the interactions that take place within that group. As such, social cohesion is an indicator for social capital. When there is no social capital (for instance in the form of reciprocal relations and norms) there is no basis for social cohesion in a community (Cloete, 2014). In this paragraph, I will briefly describe the social relations that exist within fisher communities, how these relations relate to social cohesion and what social changes are occurring that might impact social cohesion in fisher communities.

Fisher communities in the UK are traditionally associated with relatively close knit social ties. Often, these communities existed of fisher families who had been involved in the community and had been rooted in the community locality for generations (Ross, 2013). Traditional crew selection and boat ownership practices contributed to these close knit ties, as crew were often selected based on kinship and ownership was often shared among community members. Social ties within these communities were often characterized by reciprocity. As such, community members derived both mental and practical support from their social communities (Williams, 2008). Traditional fisher communities were often based on solidarity, kinship and collaboration in times of hardship (Ross, 2015; Urquhart et al., 2011). As society as a whole, and the fisher industry particularly, have changed over the years, so have these traditional fisher communities. Ross

(2013), found that decline in UK fisheries has led to changing social structures and community practices. As fewer fisher vessels have remained viable, there have been fewer opportunities for new entry into the sector. Simultaneously, as the labor market has been modernizing, there has been large out-migration from rural and fisher communities. These developments have had corrosive effects on traditional crew selection practices and social ties within fisher communities. In addition, as the fisher sector in the UK has been in decline over the last decades, individual survival has gained importance over community interests. Ross has found that as a result there is a growing individualism in fisher communities, which could be detrimental to community resilience.

In Orkney, the concern for a growing individualism has also been voiced. The fishermen I have spoken to all felt a growing pressure on the industry, which makes their work more difficult. Fishermen experience a strong competition with other fisher vessels, which creates tensions.

Used to be in a lot of contact with a lot of fishermen in the early days, when it was all good and that. But everybody keeps themselves to themselves now, that's the way it has changed. It's not a friendly environment anymore. It used to be a lot of banding around and laughing and giggling and all stories being told on the pier. That is all gone. Everybody turns up in the morning, goes to tidy up in their vehicle and then they are gone. All of that is no longer, it's no.... they are not meeting up in the pub like they used to in the day, socializing and yawning about the fishing and all that. That's all gone. They don't want to do that anymore. It's not so friendly anymore. It's, everybody is for themselves now. Me, me, me. And that's the way it has gotten. [...] I mean communities are disappearing and community values are disappearing. Everyone around the world, community value is disappearing. I don't like that, I think it's a bad thing. You see, I grew up with all that, community and everybody is in their little box. But it's the pressure of life, to try to find money, to pay the bills. Long ago it was more... everybody didn't have a lot. The lifestyle was more eased back, it still was tough, but they still would have one another. I'd help you to get something, you'd help me to get something, to get by you'd help one another. That is all gone now. That does not happen, everyone just does their own (Dennis, November, 2016).

At the same time, however, competition is inherent to the fisher sector. Although there is a sense of similarity and kinship among fishermen in Orkney, in the end everyone is in it to make a living. There is thus a shared understanding of the work that needs to be done for fishermen to be able to survive. Social relations in fisher communities are built, among others, on a shared understanding of the way of life and the shared uncertainty and stress associated with this occupation. Although competition leads to tension, there is thus also an understanding that this is part of the business. Competitiveness is needed to survive. Fisher communities are thus simultaneously characterized by a strong internal solidarity and direct commercial competition (Reed et al., 2013; Williams, 2008).

This internal solidarity is in part shaped by a shared community history. Through a shared history, community traditions can be developed, which strengthen social ties and a sense of belonging within the community (Jager et al., 2014, chpt 3). At the same time, a shared history can add to community pride and believe in the capacity to endure and uphold the fishing way of life.

We are actually quite spoiled here in Orkney, we have everything we need. We are very fortunate. You have your own kind of challenges but we are pretty good at sorting them out here. Because we've been here for generations (Dennis, November, 2016).

Although commercial-scale fishing has been a relatively short lived tradition, fishing has been done in Orkney for generations. This historic claim is often brought up when fishermen talk about threats to the community. It seems to legitimize their knowledge and know-how, but also their strength as a community to survive throughout time. As a representative of one of the fisher organizations put it; historically, the fisher community has always been able to adapt, to survive. "Fishing has endured as an industry through the oil industry and wars, it is a long term resilient industry" (Bella, September, 2016). As such, there is a lot of knowledge within the community to cope with changes. The idea that past generations have proven themselves to be resilient enough to sustain and develop the community and that this knowledge has been passed on to current generation seems to be empowering.

Fisher communities have historically held marginalized positions in society. A shared feeling of alienation from the rest of society increased the need for community cohesion, especially when safety was at risk (MMO, 2014; Urquhart et al., 2011). Processes that undermine social cohesion and change community identity, thus create vulnerability for the community (Urquhart et al., 2011). In response, social cohesion can lead to an emphasis on bonding social capital. When

this happens, the symbolic boundaries of the communities, which determine who belongs and who does not, are marked more clearly (Williams, 2008), which can lead to defensive communities (Rydin & Holman, 2004). This shared feeling of defensiveness against external threats strengthens the sense of identity and community and can help strengthen community resilience (Ross, 2015). Drawing up boundaries of a community thus stimulates bonding while at the same time, too much emphasis on bonding can obstruct bridging and linking (Rydin & Holman, 2004; Westlund, Rutten, & Boekema, 2010), as I will describe in more detail in chapter 6.

One concern for the endurance of the fisher identity and community, is the relatively low entry of young people into the sector. As the community is greying and society as a whole is changing, stimulating youth to enter the fisher sector has proven to be challenging. Some major obstacles that have been mentioned are the relatively high investment costs for boats, gear and licenses, the harsh working conditions, high risks and uncertainty and the changing working mentality of new generations (Holmyard, 2007).

I don't think there are a lot of young ones that think about getting into fishing. To get in, it is that hard. To get into fishing. The costs of boats is astronomical. Even the little dingies, and the costs of fishing gear. Unless your father is at sea with the gear and the boats and the knowledge and you leave your school you might drop in and get on in your father's business. That is mostly how the young ones get in. younger lads who don't have any fisher connections, there just isn't the help. [...]The young ones know they've got brighter horizons than getting into fishing (Chris, October, 2016).

Fishing is hard work with relatively low pay and few youngsters are willing to do it. There is good money in fishing if you are willing to work hard for it, but it is very difficult (Sander, October, 2016).

As a result, the social composition of the fisher community is changing. Whereas previously, sons from fisher families or local youth would enter the business and become part of the social network of the community, now, migrant and seasonal workers are filling up the spaces that are left. These workers tend to be less integrated into the community, as I explained above. Unfamiliarity with these *outsiders* leads to misunderstanding and sometimes conflict. The difficulty in finding new entry is a trend which is recognized all over Scotland and in fisher communities worldwide. It is related, not only to the harsh working conditions of a fisher occupation but an overall changing worker mentality, related to the modernization of work worldwide (Holmyard, 2007).

People are changing. The fishing industry has always been a physically and mentally challenging occupation in a sometimes harsh environment with a huge number of variables and added pressures to produce products at a competitive rates. So with all this in mind, fishing as a career or job may not appeal to many people as there are many other easier jobs available in the marine industry. People in the past were more understanding of their natural outdoor environment and less fearful of the day to day challenge of working in some of our harsh weather conditions that we encounter from time to time. These were the people who set up some of what we have left as a primary fishing industry nowadays (Tom, October, 2016).

5.3 CONCLUSION

To summarize, important community values for fisheries both in Orkney, and Scotland and the UK as a whole, are autonomy and perseverance. These values are expressed through a masculine working class occupational culture and specific work ethics. Fishermen are valued for their hard work and for their ability to cope with risk and uncertainty and to thrive under harsh working conditions. A shared understanding of these working conditions provides fishermen with emotional support and a sense of belonging. The shared sense of identity is thus derived from shared community values, norms and social belonging (Reed et al., 2013). These are examples of social capital which exists within the community. Community norms and values are reproduced through socialization. Traditional practices of socialization ensured that new entry into the sector would assimilate with the wider community and that community values would be passed on to next generations (Chris, October, 2016; Morris, October, 2016). Socialization thus works as a social filter for new entry and allows new entry to become accepted within the community. However, changing social structures are perceived to undermine traditional socialization processes, leading to a defensive community (Williams, 2008) which distinguishes itself from foreign fishermen who are perceived as outsiders to the community. These outsiders are perceived as not upholding the same community values and not adhering to community norms (Chris, October, 2016). The changing social structures are also felt to influence community ties. Whereas fisher communities have traditionally been based on close knit social ties and kinship, nowadays, individualism becomes more apparent as fishermen struggle to survive (Dennis, October, 2016). As these developments have significant implications for social cohesion in the

community, they could potentially have adverse implications for community collaboration and resilience (Reed et. al., 2013).

Bonding social capital can strengthen community social ties and produce the trust needed for community collaboration. It stimulates collectivism over individualism and is therefore an important tool for community development (Cloete, 2014). When trust is taken as an outcome and thus an indicator of bonding social capital, the question is if bonding is strong in the Orkney inshore fisher community. As was mentioned before, there is competition between fishermen which makes that fishermen are reluctant to share information and discuss work-related themes among themselves. On the other hand, there are community initiatives, such as increasing landing sizes for shellfish species and investing in shared facilities and infrastructures, which signal collaboration and a shared *willingness* to invest in the community. Although respondents have indicated that they have observed an overall weakening of social ties within the community, caused by increasing pressure and changing social structures in the sector, there are thus simultaneously signs that social cohesion exist in the sense that fishermen pool their resources to reach community objectives.

For a community to be resilient, this social cohesion is key. It allows community members to share resources to communicate and collaborate. A shared sense of identity, based on shared norms and values, creates a shared understanding of the world around. Through this shared understanding, community members can come to community objectives for development and as such they can collaborate. But there are more benefits to bonding social capital. A coherent and heterogeneous community is better able to make connections beyond the (symbolic) boundaries of the community, in the form of bridging and linking social capital, as it allows social groups to act as a unit (Magis, 2010). It, for instance, allows communities to lobby their interests in governance arenas. Bonding social capital is thus an important condition for effecting bridging and linking. In the next chapter, I will describe the role of linking in marine spatial planning processes and opportunities for linking for the inshore shellfish community.



Part of quilt made by residents of the Orkney Islands, representing key features of Orkney culture and life. On display in the Kirkwall library.

6. LINKING SOCIAL CAPITAL AND MARINE SPATIAL PLANNING IN ORKNEY

In this chapter, I will discuss the function of linking social capital in facilitating participation. I will show what have been some of the key obstacles for fishers' participation with marine spatial planning in Orkney, and how the fisher organizations form an important link between fishers and governance stakeholders. It seems that linking has not been not very strong in Orkney, in the pilot plan process, but I will describe two governance structures which could potentially create opportunities for the inshore shellfish fisher community to gain more power in marine spatial planning in the future. Finally, I will reflect on some of the ways in which linking can be strengthened for the fisher community in Orkney, both from within the community and as part of the marine spatial planning process.

6.1 LINKING SOCIAL CAPITAL AND PARTICIPATION

We are a bit saddened about that whole issue because when we first saw the marine spatial plan, there was no mention of fishermen, fishing boats or anything from the start in it. So myself and Fiona [secretary of the OFA] had a meeting with the Council and we were looking into it at how it could be rewritten so it would have at least something in it, so that it could accommodate fishing. It had a lot in it for other marine users, renewables sector and things like that but none of the first primary industries were mentioned in it at all and it was quite disappointing really. Again, we have been fishing in Orkney for thousands of years probably, for the Council to forget about us, not to mention it, it was pretty disappointing (Tom, October, 2016).

The Orkney inshore shellfish fisher community and the working group for the PFOW pilot plan got off on a rough start when marine spatial planning was first introduced in 2010. Due to the lack of fisheries inclusion in the decision to lease sea beds for marine renewables, and the lack of fisheries representation in the advisory group for the pilot plan, fisheries felt like they had been side-lined in key stages of the planning process (Bella, September, 2016; Simon, October, 2016; Tom, October, 2016). For them, the biggest damage, in the form of potential loss of sea grounds, had already been done. They felt like they had little ability to further influence decision-making in the planning process and considered consultations to be procedural stages in marine governance with mainly a symbolic function (Chris, October, 2016; Dennis, November, 2016; Earl, November, 2016; Sander, October, 2016; Morris, October, 2016).

The general view is that we need to mitigate any more loss of ground, as a fishing industry. We'd just come through a very worrying period of time of the Crown Estate leasing the sea bed to renewables companies which happened prior to any plan of any kind. So that has already happened. So in a sense the marine spatial plan came after all of that, whereas it should have come before all of that. So as far as our participation in the plan goes, it was kind of meaningless really, because the most crucial potentially devastating allocations of area of the sea had already taken place (Bella, September, 2016).

As I mentioned in the Theoretical Framework, participation is about the involvement of stakeholders, such as civil society actors, in politics and planning, allowing them to act as agent of change. Furthermore, participation is a capacity-building exercise, in which coalitions of governance agents mobilize resources and exchange knowledge to create a shared discourse and understanding of the subject of governance (van Tatenhove, 2011, 2013). The importance of participation for effective policy-making has been long established. Participation increases stakeholder ownership over policies, increases stakeholder responsibility and enhances enforceability, compliance, legitimacy and effectiveness of new policies and legislation. Participation can also be a trust building process between governance stakeholders, as a shared understanding of the subject of governance is created (Flannery & Cinnéide, 2012; Fletcher, McKinley, Buchan, Smith, & McHugh, 2013; Pita et al., 2010). Through participation, for instance, local knowledge can be mobilized to improve MSP. As such, the generation of information to inform spatial planning is an opportunity for stakeholder participation (Flannery & Cinnéide, 2012; Marine Scotland, 2016), something I will elaborate on in chapter seven.

For communities, linking social capital can play an important role in facilitating participation. Linking refers to connections made across scales of governance. It allows communities to connect to actors with power and authority, which creates opportunities for communities to gain access to resources and to get a stronger position and voice in, for instance, governance processes (Magis, 2010). Nenadovic and Epstein (2016), operationalize linking social capital by using trust in governance agencies as an indicator for *cognitive-linking social capital*. Trust is an important element of governance, as it enables the exchange of information and improves collaboration for joint decision-making (Grafton, 2005). Among fishermen in Orkney, trust in marine governance authorities seems to be low due to the perceived lack of understanding these authorities have for the fisher way of life, but also due to the perceived lack of influence fishermen have on marine governance decision-making, as I described in chapter four. Fishers' experiences with

consultations have been that their opinions were often overruled by other interests, which has led to pessimism regarding the political power of fisheries

We know where we are fishing, we know how we want to be, we know how the tides are. Everything else is just an encroachment of what we are doing. Marine renewables have been just the last six of seven years. Some of the sea areas that they get may or may not conflict what we are doing. All we have to do is keep the association, if there is any conflict, if they are putting forward any areas that we fish then we need to have a say in so. But like I said, we've always felt like we are at the bottom of the list. We more or less are told. This will go ahead, this area. [...] Even though they are having consultations, they are not really. We are not stupid. It doesn't really matter. We've always thought that. Especially when there is big money concerned. [...] In the grand scheme of things, fishing means nothing (Chris, October, 2016).

Rydin and Holman (2004), describe how a history of negative experiences with local or national authority can lead to entrenched distrust, which is an obstacle for collaboration. In his report on fisheries' perception of marine spatial planning, Symes (2005), describes that the fisher industry has historically, been sidelined in marine governance processes as the industry has been presented with done deals at consultations, which has resulted in misrepresentation of fisher interests in marine policies. The author suggests that both the fisher industry itself and governance authorities are to blame for this. He states the industry has not undertaken sufficient actions to become involved in decision-making, and authorities have not allocated enough resources to facilitate meaningful participation. In the next paragraph, I will further elaborate on the gap that seems to exist between policy-makers involved in marine governance and fisheries in Orkney, as an obstacle for participation in the pilot MSP.

6.2 A GAP BETWEEN FISHERMEN AND GOVERNANCE AUTHORITIES IN MARINE SPATIAL PLANNING

In chapter four, I described that the fishermen in Orkney feel that their perception and use of space is misunderstood by government officials. As a consequence, fisheries policies don't seem to resonate with fishers' reality and are therefore perceived as limiting the fisheries, instead of supporting them (Symes, 2005). The cause for this perceived gap between fisheries and marine governance officials seems to be two-fold. On the one hand, fishermen in Orkney feel that there are misunderstood and undervalued by policy-makers. Particularly, they feel that decision-makers in Marine Scotland do not understand fishers' reality.

I use every opportunity that I can through official channels to make people aware of this. But in general terms, at officer levels at government and local government there is very little understanding of dynamics of fishing. Because it is unseen. People cannot see that happen at sea, so it is an unknown place to them. There is a huge knowledge gap to be bridged between the act of industry and the decision-makers who work in their offices and have a whole different mind-set about how the world works really (Bella, September, 2016).

On the other hand, fishermen seem to lack the understanding, resources or willingness to engage with marine policy making, which is problematic for stakeholder participation and representation. This is in line with findings by Fletcher et al. (2013). In their evaluation of the participatory processes in two pilot MSP projects in the UK, they found that marine spatial planning as a new concept and a developing form of marine governance, generates uncertainty regarding its functioning. Stakeholders do not know exactly how MSP could benefit them, and what skills and knowledge are required for them to contribute to MSP. In addition, as one of the representatives from a fisher organization in Orkney explained, marine spatial planning is a very complex form of governance. Gaining understanding of its function and the position of fisheries in MSP, as well as staying up to date with developments regarding the pilot plan, took fisher representatives a lot of time and effort (Bella, September, 2016).

I can understand they are being cautious in their approach but when you are working in a business environment or a fishing environment where you have to take decisions very quickly for the fishermen because they need to make money or here because we need to change things then it's quite a slow process at times. That means that we representing the fisher interest, we need to make a real effort to keep involved in the process because you think oh, another day, another day in the office, another day doing consultation and other day doing this, so it is very time consuming for us in the process (Simon, October, 2016).

For fishermen, MSP is one of the many policies that could potentially impact fisheries. As their primary concern is securing their income, they generally lack the time and willingness to stay up-to-date with current governance developments (Chris, October, 2016; Morris, October, 2016; Dennis, November, 2016; Personal communications,

October, 2016). Being involved in governance processes thus requires an investment of time and effort made by fishermen, which can be an obstacle for participation, when they don't see the benefit (the return of their investment) of their participation.

Well, my biggest concern is that it doesn't affect my livelihood. I can't worry about everything. You try to keep your eye out for many things, but that is also what is being part of an association. If you thought about everything that is going on, it would just wear you down. If you just concentrate on making a living in scallops and you just fish in certain areas. You try to concentrate on that. And let the association and what would be a band on fisheries worry about this bigger things. And then let even bigger organizations worry about even bigger concerns. You cannot think it all through, that is what I think (Chris, October, 2016).

As one of the involved policy-makers put it: "they are not in the business of plan making, they have their own sector and get on with their own business. But they would like to be able to influence the process" (Damien, October, 2016). Some of the objections fishermen have against the current system of marine governance, is that it feels like top-down regulation and there is a lack of transparency as a result of the bureaucratic system in which decision-making takes place (Symes, 2005; Chris, October, 2016). Although marine spatial planning is meant to create more holistic, integrated marine policy, the complexity of marine spatial planning is perceived as adding to the inaccessibility of marine governance.

It is like I said there were over 100 consultations last year, you know, if representatives don't have time to go to them all, then certainly not fisherman. One of the reasons fisherman wanted to get out with the EU was that there was too much bureaucracy and too many things bugging them down. They want to know that they have a say in the marine planning process but they don't want to be very engaged with it. They want to be catching crabs and catching lobsters (Simon, October, 2016).

The fact that policy-makers, fishermen and representatives of fisher organizations indicate that there has been insufficient engagement of fisheries in the pilot planning process, in combination with low levels of trust fisheries have in governance authorities and processes, signals that there has been a lack of linking social capital in the set-up of the pilot plan for the PFOW. A lack of available resources – such as time and money - and the complexity of marine spatial planning undermine the capacity of fishers to participate in the planning process. But also on the policy-makers' side, there was limited capacity to ensure meaningful participation throughout the process. One of the lessons learned by the working group for the pilot MSP for the PFOW, has been that ensuring meaningful engagement through stakeholder participation can be a big challenge (Marine Scotland, 2016). The working group has learned that meaningful participation in plan-making, which covers a large and isolated geographic area with a wide range of stakeholders, is resource intensive. Engaging in meaningful dialogue with these stakeholders requires time, money, staff and skills. For the pilot MSP in the PFOW, limited staff and resources were - despite the best efforts of the team - primary obstacles to ensure this kind of intensive stakeholder participation (Marine Scotland, 2016; Damien, October, 2016; Wendy, November, 2016). Ironically enough, however, it is participation itself which can help built this capacity. Through the exchange of knowledge, participants create an understanding of marine spatial planning and they gain experience with the process and planning discourse. As such, they develop the skills and knowledge needed to be able to contribute to marine spatial planning Furthermore, through this interaction, trust can be built between governance stakeholders (Fletcher et al., 2013). Linkages between fisher communities and regulators can thus stimulate an exchange of knowledge which contributes to good fisheries governance (Grafton, 2005), while an absence of linking can undermine marine governance (Nenadovic & Epstein, 2016). Both policy-makers and fishermen I interviewed indicated that fisher organizations have an important function in linking the domain of governance and the world of fishermen, to facilitate participation.

6.3 FISHERIES ORGANIZATIONS: THE MISSING LINK?

That is why we have to be part of the process right from the onset, whether we want to be or not. We have to engage. So it is about engagement but also about taking the process into your own hands. You don't know what is in the future but you can look at what is on the horizon and that is my job that is the job of people representing the industry. That is also why you have this plan set up, we need to be looking ahead and see what are the challenges that are coming to us (Simon, October, 2016).

The Orkney Fisheries Association (OFA) is a representative membership group, set-up to protect the interest of the inshore fisheries in Orkney. Orkney Fisherman's Society (OFS) is a cooperative which manages the Orkney crab processing facilities and lobster hatchery and markets Orkney shellfish. The OFS is less involved in the formal

representation of fishermen in policy than the OFA, but is nonetheless an important voice for the sector. Although both organizations have distinct core objectives and organizational structures, there is some overlap in their mandates in the sense that they both work towards the improvement and protection of commercial fisheries in Orkney. Both organizations are therefore part of Orkney Sustainable Fisheries, which is set-up to generate fisheries science in support of fisheries improvement and management (Simon, October, 2016). The OFA is also connected to the Scotland Fishermen's Federation (SFF), which lobbies fisheries' interest on a national and international scale. In the pilot process for the PFOW MSP, the Orkney Fisheries Association has acted as a representative body for the inshore fisheries and has been active in workshops, consultations and meetings with the working group and other marine stakeholders. The SFF has also responded to the consultation on the draft pilot plan and has assisted the OFA with legal advice (Bella, September, 2016).

As I mentioned, it is challenging – if not sometimes impossible – for fishermen to be actively engaged in marine governance on their own account. The amount of resources required to respond to consultations and to stay on top of policy developments is not compatible with the fisher occupation. In addition, most fishermen are primarily interested in going out to sea to fish, and don't want to be bothered with policy processes (Personal communications, October, 2016). As one of the fishermen I interviewed put it: "If it starts affecting me, I will start worrying about it" (Earl, November, 2016). Being member of a representative organization, is therefore important for fishermen to ensure their interests are being voiced and they are made aware of opportunities for participation.

For the majority, they want to catch, they want to go out and catch. I think if they have a trust in the people who are representing them, they just want people to go on with that. [...] Generally, if they didn't trust me I wouldn't be here (Simon, October, 2016).

It is way beyond the daily kind of issues they would really be connected with or have any time to take part in. So I was very much just a front person for the organization. I only disseminate the information to them which is of absolute critical need for them to have. Because we get a huge amount of information right here. To fill up their inboxes with all this information on marine spatial planning would have been a waste of time (Bella, September, 2016).

For the fishermen, the fisher organizations are thus important in laying the ground work for their participation. The representatives working for these organizations are there to be up-to-date with current marine developments, to respond to formal consultations and act as a voice for the community. The OFA will for instance create awareness among its members of proposals for fish farms that could potentially restrict access to fishing areas. They will also inform members about public meetings and workshops that could be of interest for fishermen, or where it could be valuable for fishermen to be present, in terms of representation (Bella, September, 2016; Personal communications, October, November, 2016). Through, for instance, articles or messages in local newspaper the Orcadian, the OFA has at times also posted request for non-members to get involved (Bella, September, 2016).

For policy-makers, the level of social organization of fishermen in Orkney has also proven to be beneficial. Their experience has been that it is difficult to get in touch with individual fishermen, who live in dispersed peripheral areas, are often out at sea and whose personal contacts are difficult to acquire – certainly as many fishermen don't have e-mail, or are not actively using it. The pilot project for the PFOW covered the fisheries of Orkney and the county of Caithness and Sutherland on the North-East coast of the Scottish Mainland. On the Caithness side of the water, there are no fisher organizations that act as a representative body. For policy-makers, this made it more challenging to inform fishermen there about the pilot project and to get them involved. One of the policy-makers I interviewed, described an incident where fishermen in Caithness were angry because they felt left-out of consultation because they had not been informed about the process.

'It's not as if we can phone you up because you are not part of an organization, I don't know who you are', none of them are on e-mail or won't give it to you if they are.... There is a limit to what you can do. They don't want to talk to us, so... that also made it more tricky. I was talking to someone who was a bit more reasonable and I said that's what made it more difficult, that there was not just one person we could get in touch with. [...] We found that frustrating because they are a very important ground and they are impossible to get a hold of. Whereas in Orkney, there are two main organizations that you can get a hold of (Wendy, November, 2016).

Overall, both policy-makers I interviewed felt that having fisher organizations in Orkney contributed to the level of involvement of fisheries there, as well as to the quality of the dialogue and feedback on consultations.

What was interesting, there was definitely a difference between what happened in Orkney and what happened over at Caithness side. There seemed to be much more awareness in Orkney about marine planning and the issues we are dealing with. About marine energy, about fisheries, about nature conservation, about recreational stuff. In Orkney the stakeholders were pretty well involved and there was quite a good debate had. There was a well-informed debate, I can say that. [...] Generally, people who provided more detailed feedback – and this is a general thing in terms of planning policy – was usually people who are paid to do it for their organization. [...] They don't have an association in Caithness. There are about 50 different people fishing off the coast over there. They weren't necessarily as organized over there as they are in Orkney. So you would have fishermen coming along to consultations that we did, but generally the most detailed feedback we got was through the associations. Through OFA and OSF (Damien, October, 2016).

The findings above suggest that fisher organizations perform an important task in linking fishers with governance actors to create and seize opportunities for participation in marine planning processes. There is, however, also a risk in too readily accepting the social organization of fishermen as the missing link in governance participation. As Cleaver (2005) discusses, such emphasis on the function of social capital as empowering communities and organizing social representation, may shift the focus of responsibility for inclusion from the domain of governance to the domain of civil society. Risk in this shift in focus is, according to the author, that communities become responsible for their own exclusion in policies. Although the frustration of policy-makers about the challenge of getting in touch with fishermen who lack social organizational structures is understandable, the quotes above suggest that fisher organization can almost be considered a pre-condition for fishers' participation. When there is limited capacity of governance actors to facilitate participation, the lack of social organization, in the form of fisher organizations, could be considered a deal breaker by policy-makers. After all, *"there is a limit to what you can do"* (Wendy, November, 2016). Suggestion is thus, that some form of bottom-up initiative to facilitate participation can be expected from civil society stakeholders. However, communities which are marginalized and lack (access to) assets due to a relatively weak social, economic and political status or who lack agency due to institutionalized social inequality, may not be able to show such initiatives. As Jentoft and Knol (2014) and Symes (2005), warn, fisheries often find themselves in that exact vulnerable position. The fact that the Orkney inshore shellfish fisher community has set up fisher organizations which function as connectors to governance actors and arenas and markets, signals this is an exceptionally resilient fisher community which uses its community assets to mobilize resources and strengthen its position. At the same time, the pilot planning process, however, has shown that the community still lacks essential linking social capital to gain meaningful power in the policy process. Having social organization, is thus not a guarantee for fisheries engagement with marine planning, just as adopting a participatory approach to governance is no guarantee of stakeholder inclusion. Despite bonding social capital allowing for the social organization of fishermen to work towards shared objectives and participatory procedures being in place in governance arrangements, linking social capital is thus needed to connect fishermen to networks of governance stakeholders to be able to participate in negotiations and to become included in policy and governance. Linking social capital is thus important as it creates agency to participate. As described in the Theoretical Framework, agency is the ability to act and exercise power (Cleaver, 2005). Cleaver (2005; 2007), describes how social and institutional structures influence the opportunities to access resources and exercise agency. He warns too simplistic evaluation of participation as a *magic charm* for inclusive governance, surpasses the complex structural relational obstacles that obstruct people from accessing networks and acting as agents of change. Although fisher organizations can thus be seen as facilitating factor for linking social capital, for fisheries to gain power, additional changes in governance structures might be needed, with an emphasis on building on the linkages between fisheries and governance.

When asked about what they consider their role should be in marine spatial planning, both representatives from fisher organizations emphasized the need for their involvement in future planning to ensure fisher interests are being heard.

I think it should be at the top table. I don't think it should be at the head of the table but I think it should be one of six or seven bodies or industries or representatives of organizations. For sure you are going to have local authority, local Planning Authority, for sure you were going to have Environmental interests, NGOs that are in there, but fishing has to be there pretty much on an equal level just like everybody else (Simon, October, 2016).

In the Marine Scotland Act 2010, the need for a reorganization of power in marine governance processes is recognized. This Act proposes the set-up of devolved authorities in the form of Marine Planning Partnerships², in which fisheries

² The objective of these Marine Planning Partnerships, is to take marine planning forward in their designated regions. The MPPs will thus form the governance structure for marine planning in Scotland. MPPs consist of a delegate authority

gain power through their representation in Inshore Fisheries Groups³, which are new organizational structures set-up to formally represent fisheries in marine governance (Damien, October, 2016).

6.4 CONCLUSION

The policy-makers I interviewed noted that fishermen may not be the easiest stakeholders to work with in marine governance. For one, there are practical limitations: they don't have time, are difficult to reach and are not usually up-to-date with contemporary policy developments. But in addition, the policy-makers noted a distinct fishers' mentality which was not always accommodating to participation. They noted that fishermen are overall not always very open, trusting and helpful towards, what is in fishermen's eyes, top-down and bureaucratic decision-making (Damien, October, 2016; Wendy, November, 2016). This insinuates that there is a cultural component in Orkney that does not favor linking. The mentality fishermen have towards marine policy-making may obstruct their own participation. Fishermen explain their lack of trust in policy-making as a result of previous experiences with consultation and top-down decision-making (Chris, October, 2016; Earl, November, 2016). As I will describe in chapter seven, they are taking initiatives outside the governance domain to strengthen their economic and political position, because they feel that the governance arena is one of unequal power. This, however, suggests, that policy-makers still have a lot of trust – and capacity building to do, to facilitate linking with fisher communities. As Westlund et al. (2010), describe practical and physical barriers which isolate communities can strengthen bonding but obstructs linking social capital. Practical barriers to participation are evident in the peripheral location of the community, the limited tools for communication fishermen seem to have, and time and money available for participatory processes. The research findings presented in this chapter, however, suggest that there are also mental barriers that can obstruct linking social capital. As Jentoft and Knol (2014), state, stakeholders who think they have a lot to lose with the introduction of new policies – such as fishermen, who fear for a loss of space, freedom and flexibility – may be sceptical and defensive towards new policies and their participatory processes. As I described in the theoretical framework, defensive communities inhibit external interactions and thereby opportunities for linking (Rydin & Holman, 2004). Linking, as a way to enable interaction and collaboration between fisheries and policy-makers, is thus an opportunity for policy-makers, not only to gain access to fisheries' knowledge to inform policy-making, but also to increase public support for new policies. It is thus not only up to fishermen to create and seize opportunities for linking, but also to policy-makers, to break down the barriers for participation. An interesting initiative by the working group for the PFOW pilot, has been to set-up a forum for marine planners, in which planners involved in the development of regional marine spatial plans exchange knowledge and experiences. Through this initiative, policy-makers learn from one another, among other things, about different ways to address challenges for stakeholder engagement. The working group has thus showed initiative to build capacity among the planner community (Wendy, November, 2016). For the fisher community, fisher organizations are an important medium for linking. The fisher organizations are an outcome of bonding social capital, as they are based on shared objectives of the community and are an important node in the social network of the community (Simon, October, 2016). Fisher organizations can help fishermen to gain access to complex governance processes, they strengthen the voice and power fishermen have and help mobilize resources within the community or gain access to resources beyond the community. However, the pilot planning process has shown that, fishermen in Orkney have not been able to mobilize their linking social capital to optimize their influence in marine spatial planning negotiations. Although fisher organizations facilitate the establishment of linkages between fishermen and governance stakeholders, these forms of social organization should not be considered a magic charm for fisheries inclusion in policy and governance.

in charge of developing regional spatial plans, and an advisory group of local stakeholders to inform the planning process. In Orkney, how exactly this MPP will be set-up is still under debate (JG, October, 2016).

³ The Inshore Fisheries Groups (IFGs) are regional structures designed to create more autonomy in inshore fisheries management. The structure of the IFGs is tailored to regional contexts. In Orkney, Orkney Sustainable Fisheries has been selected to act as the regional IFG, because this organization was already working towards sustainable, profitable and locally-managed fisheries through the development of fisheries science. Furthermore, the OSF covers all the fisheries around Orkney, so both inshore and offshore. IFGs can take up an advisory role in policy-making and management. At the moment the IFGs do not have a statutory status or regulatory control yet, but a new Inshore Fisheries Bill is proposed to delegate more authority to these bodies (SC, October, 2016). As the IFGs form an opportunity for decentralization in fisheries management, these bodies create an opportunity for more bottom-up fisheries governance and higher levels of involvement through the empowerment of fisher communities (Jentoft & Knol, 2014). The regional IFG structure is set up by Marine Scotland, the national marine science and governance body in Scotland. Development of a national network of IFGs is taking place under the guidance of Marine Scotland. Being a part of the IFG and this IFG network, could thus also create opportunities to strengthen the connections between local fisheries and Marine Scotland. The IFG will play a central role in the MPP, but it is not yet clear if this will be a delegate or advisory role (JG, October, 2016).

7. BRIDGING SOCIAL CAPITAL

The experience of fishermen with the pilot marine spatial plan has thus been that their ability to influence the agenda, discourse and outputs of the plan has been limited. In this chapter, I will discuss the strategies of the inshore shell fish community to mobilize resources to gain more economic and political power, through bridging social capital. As I discussed in the previous chapter, the generation of information to inform spatial planning is an opportunity for stakeholders to gain power in the policy process. I will argue that the negotiations that take place to create a shared understanding of this marine spatial planning discourse, are an expression of power. I will show in what way this process relates to the fishers' concerns for power and spatiality. Furthermore, I will argue that fishermen use bridging social capital to mobilize the resources needed to 1) influence the way the marine space is perceived and defined to gain influence in marine spatial planning and 2) to reframe the inshore shellfish community as a central player in marine development. In the first paragraph, I will elaborate on the role of information and mapping in marine governance negotiations and the power that is hidden in the generation, interpretation and dissemination of information. I will also elaborate on the way in which fisheries' knowledge and information has been included in the pilot plan. In the second chapter, I describe expressions of bridging social capital in Orkney and its function in reframing and strengthening the position of fishermen both within and outside the governance arena.

7.1 MARINE SPATIAL PLANNING: ARENA OF NEGOTIATIONS

Marine governance is a system of negotiation through which stakeholders create a shared understanding of the subject of governance (Cleaver, 2007; van Tatenhove, 2011). Information is a central resource for marine spatial planning (Grafton, 2005). Gathering of data, interpretation and dissemination of information are important power processes in governance negotiations. These processes lead to a shared understanding of reality in which the subject of governance is problematized (Smith, 2015). In this paragraph, I will show how mapping is used to create a marine spatial planning discourse to express and represent the marine space.

7.1.1 INFORMATION AND POWER

Marine spatial planning is a process in which information is produced, interpreted and (re-) presented (Toonen & van Tatenhove, 2013). The development of the pilot MSP for the PFOW was preceded by a scoping and a research phase. These phases were included to identify data gaps and produce scientific knowledge to support and legitimize evidence-based policy-making (Pilot PFOW Working Group, 2016). Marine Scotland, the national body for marine management, has been driving the scoping and research phases of the pilot plan and most of the studies undertaken to inform the pilot plan have been conducted by Marine Scotland Science and the Scottish national government. Mapping has been an important tool to visualize spatial information for the PFOW. Maps were for instance used to identify existing maritime uses and infrastructures, marine heritage sites and potential constraints for marine development. This information functions as guidance for (future) marine developments in the plan area (Marine Scotland, 2016). As such, information used to support planning and policy-making influences physical developments in space. In this paragraph, I will elaborate on the (hidden) power in information production, interpretation and dissemination and the significance of this power for marine governance negotiations.

In the Introduction, I discussed the complexity of marine governance as the marine environment is a dynamic and ambiguous space, large parts, uses and interrelations of which are not clearly visible. What's more, different stakeholders involved in marine governance negotiations, have different perceptions of marine space, issues and priorities for development and appropriate solutions. This diversity and complexity leads Jentoft and Knol (2014), to describe marine spatial planning as a 'wicked problem'. They state it is an arena of social, political and institutional debate in which stakeholders present different interpretations of the 'problem' to be governed and desirable 'solutions'. As there is not a singular definition of this 'problem', there are no straightforward 'solutions' for the governance of marine space. As stakeholders produce information to bring their interests forwards in an attempt to influence the discourses which legitimize policy-making, the process of marine governance becomes a manifestation of power (Toonen & van Tatenhove, 2013).

Through marine governance negotiations discourses are mobilized which influence the way the subject of governance is defined and policies are legitimized (van Tatenhove, 2011). These discourses are based on spatial information and mental representation of the marine space. Toonen and van Tatenhove (2013), describe marine governance negotiations as interactions through which marine reality is reconstructed to support the ordering of maritime activities

in time and space. This reconstructed reality is the outcome of connections made between the physical space, the cultural perception of space and the institutional context of marine governance. Important factor in these negotiations are the connections which are made between the social, economic and political networks in which people organize themselves. Through these interactions in which a shared understanding of reality is negotiated, ideas about planning, management and use of space become apparent. As such, a narrative (or discourse) is produced to describe the marine environment, to understand this environment as a subject of governance and to legitimize policies to govern the use and development of this environment.

Maps are an important tool for the expression of spatial information in marine spatial planning (Smith & Brennan, 2012; Tyldesley, 2004). Maps function as simplified representations of reality and are used to visualize the subject of governance (the marine space and marine activities in that space). As mapping includes and excludes specific types of information, maps frame the reality they represent. There is thus power hidden in mapping processes. Furthermore, maps are used to legitimize policies and management measures. As such, when people base their actions on maps, maps not only represent reality, they can prescribe it (Smith & Brennan, 2012). Smith (2015), even goes so far to describe maps as agents of change. He describes tools and mechanisms which communicate and help define marine space, such as maps, as *technologies of power* in marine governance. Technologies of power allow the subject of governance – the marine space – to be re-imagined, communicated and negotiated through the network of stakeholders involved in the marine governance arena. These technologies thus propagate a *mentality of space* which facilitates governance negotiations. Through the creation of a shared discourse and a shared understanding of marine space, stakeholders are able to enter into a dialogue on the governance of this space.

People's relation to space is socially constructed and can be used to exercise power over others, for instance through territorial exclusion (Bærenholdt & Aarsæther, 2002). When spatial relations are manifested in maps, these maps thus can become tools to strengthen spatial claims. Those who are involved in mapping spatial information for marine planning, can thus have a powerful position in setting the stage for governance negotiations. Likewise, those who are excluded from the mapping exercise or who are excluded from the representation of marine space on the maps, can have a less favorable position in marine spatial planning negotiations. As such, information is used to determine what perceptions and stakeholders are included in governance (Smith & Brennan, 2012; Toonen & van Tatenhove, 2013). This has implications for the legitimacy of marine spatial planning. When the tools used to justify marine policy exclude certain marine users from spatial representation, the legitimacy of the policy can be questioned. Especially social dimensions of space are at risk of being left out or underrepresented in mapping exercises (Jentoft & Knol, 2014; Smith & Brennan, 2012). As such, maps become as much tools for exclusion, as they are for inclusion.

In his research on the introduction and institutionalization of marine spatial planning as a new system of governance in the Pentland Firth and Orkney Water strategic planning area, Smith (2015), describes how maps have been used to affect the way marine space is imagined. He argues that in order to create a basis for marine spatial planning, the marine environment, which is often perceived as 'open space', needed to be re-imagined as a space of opportunity and challenge. By visualizing the marine environment as an active space – through representation in graphs, figures and maps - stakeholders re-conceptualize it in terms of development. This allows the discussion on marine spatial planning for the Pentland Firth and Orkney Waters, to be about appropriate designation of this previously perceived 'open space'. Interestingly, though, there seems to be a bias in the discourse used for marine spatial planning in the PFO. Emphasis lies on the opportunities for development for new marine users, whereby avoiding conflict with existing marine users is framed as the main challenge. This suggests that existing users, such as fisheries, are subject of governance, instead of drivers of marine development. New marine developers, however, are framed as propagators of the national Blue Growth agenda for the marine environment. Implication of this discourse is, that fisheries are ascribed a passive role in marine development. When looking at the produced policy documents, fisheries are mentioned as a stakeholder to take into account, but not as a stakeholder that might be actively looking to manifest itself in the marine space that is being developed.

There is a prevailing ethos that because some enthusiasts have only recently 'discovered' the sea on which fishermen have worked for generations that their concept and snapshot view of it carries more weight than the vernacular knowledge of the fishing community. Work must be constantly ongoing to recalibrate this misalignment [...] Businesses fishing is not regarded as a developer to be affected. Without the data gaps filled that have been outlined in other areas of this consultation the plan will remain skewed in favor of the spatial and zonal activities of those developers who operate in this way. Without recognition of the wide-roaming fundamental of hunter-gathering fishing practices this aspect of business operation will remain discriminated against and disadvantaged (Orkney Fisheries Association, 2015).

The role of information in marine spatial planning is thus Janus-faced. On the one hand, information is needed for evidence-based policy-making. Spatial information is used to justify decision-making and to create a shared understanding of the subject of governance (Grafton, 2005; Jentoft & Knol, 2014). Tools such as maps are used to open up the dialogue about spatiality and to create a mentality in which a spatial planning discourse takes central stage (Smith, 2015). On the other hand, there is power in the (re-)production, interpretation and representation of spatial information. The same tools that are needed to create the space for negotiation, are also the tools that include and exclude topics of interest, actors and perceptions of space (Smith & Brennan, 2012; Toonen & van Tatenhove, 2013). In the following paragraphs, I will reflect on the position of fishermen with regard to the production of spatial information and marine governance negotiations.

7.1.2 FISHERIES' SCIENCE AND MARINE SPATIAL PLANNING IN ORKNEY

Due to the complexity of marine space, maritime actors become important providers of spatial information, particularly on the socio-economic value of marine space and maritime activities (Toonen & van Tatenhove, 2013). It is argued that in order to create a comprehensive understanding of the complex marine space, a decentralized approach is required, following the logic that those who are close to the 'problem', are likely to have the deepest understanding of said 'problem' (Jentoft & Knol, 2014).

An important aspect of marine spatial planning is the ecosystem-based approach in line with objectives for sustainable development. Symes (2005), however, warns that fishermen can be faced with an unequal burden of proof, when there is an emphasis on environmental sustainability. Using the precautionary principle, a lack of evidence with regard to the negative impact of fishing on the marine environment, is no excuse for inaction towards its protection. Concern is that an emphasis on this aspect of sustainability may lead to protectionist policy priorities, which are associated with loss of freedom and flexibility for fisheries (Jentoft & Knol, 2014; MB, November, 2016; Symes, 2005). As Symes (2005), describes, fishermen apply an ecosystem-based approach to their fishing practices, in the sense that they base their decision-making on what they know about the environment, the tides, the weather, the seasons and the behavior of fish stocks. Although they use tools such as numerical charts and weather forecasts, much of what they know is also stored in *mental maps*. These maps are informed by experience, trial and error. Fishermen are thus used to dealing with different kinds of evidence than what is expected or standardized in policy-making and planning. In chapter four, I introduced the concerns fishermen in Orkney have for the spatial dimension of marine spatial planning. Main concern in Orkney is, that fishermen's perception of marine space as holistic, multidimensional and dynamic is not compatible with standard planning tools and discourses. This concern is in line with findings by Smith and Brennan (2012), in their research on the limitations of mapping as a spatial representation of the marine environment. They describe how fishermen relate to, for instance, weather conditions and gear status in their decision-making. These factors become invisible in maps that plot hotspots of fishing activity. In fishermen's experience, important fishing areas will be much larger than the areas with the highest economic returns. The risk with spatial analysis, is that these complex social dimensions are not captured. Concerns of the Orkney inshore shellfish fisher community that their perception of marine space is overlooked in planning may thus not be unfounded.

In the research phase of the pilot planning process, Marine Scotland has created multiple maps to visualize different maritime activities in the designated marine area. For large (over 15 meter) vessels, Vessel Monitoring System (VMS) equipment onboard is mandatory. Data from this equipment, which plots vessel movement every two hours, in combination with catch data was used to estimate the spatial distribution and landing values of commercial fishing in the Pentland Firth and Orkney Waters. Based on this information, maps were created to show types of fishing activities in the area, important nursing grounds for different species and the locations of main fishing grounds based on vessel movement. VMS, however, only generates estimates for fishing activity and does not cover under 15 meter vessels, which are mostly active in the inshore waters where there's most competition for space. For these boats, data from the ScotMap pilot in Orkney was used. ScotMap is a mapping study conducted by Marine Scotland to survey the value and distribution of commercial Scottish inshore fisheries. For this study, face-to-face interviews were conducted with Orcadian fishermen. Respondents were, among others, asked to indicate their fishing grounds and fishing generated income for 2007-2011. Although there was reluctance among some respondents to share spatial and income information and responses were variable in precision, there was a 100% coverage of the Orkney inshore fisheries in this study. There was thus an impressive amount of participation of the Orkney inshore fisheries in this mapping exercise. The gathered information has been used to map the spatial allocation of the fisheries around Orkney and to gain insight in the economic value of the fisheries (Kafas, 2014; Marine Scotland, 2012a; Marine Scotland Science, 2014, 2015). The controversy around the leasing of Orcadian sea beds for marine renewables, was in part due to the lack of available information about the use of marine space, particularly regarding the spatial distribution of fishing activities. The ScotMap research was set-up to fill this data gap and to improve the dialogue with the inshore fisheries (Johnson, 2011;

SC, October, 2016; Johnson et al., 2015). The mapping exercise by Marine Scotland has thus generated much needed information to inform marine spatial planning (KJ, October, 2016). Through the ScotMap project, the spatial distribution of the inshore fisheries was visualized. Although this has been an important step for fisheries to become involved in MSP for the PFOV, there is also critique from the fisher community.

ScotMap fails in that it is solely related to value and vessel numbers within the area. The seasonal and weather dependent patterns of fishing are not captured, nor are navigational routes to fishing grounds or the high importance of sheltered winter grounds. Reliance on ScotMap by developers has already had the opposite effect to that for which it was initially 'sold' to fishermen in order to gain their participation. The spatial removal of sea areas can and has been translated into 'insignificant' (developer's words) losses of grounds because of relative value to other developments ignoring the other values which remain undocumented. The true picture is very different as incremental loss of spatial area is a loss to the whole fishery – to everyone who fishes within Orkney waters through displacement. Loss of spatial area to one fisherman means effectively a loss of income from giving up that area and an increase in competition on another area, a greater journey to travel (increased carbon use) to a less optimum place or a less safe area to work in. [...] The existing productive grounds of the fishery require to be mapped including the areas where developing non-adult stages of commercial species exist and move from to their adult locations. These are different areas from where stock are commercially caught but interruption or damage to them in the journey to their adult grounds will have a detrimental effect on fishermen's businesses and the continued security of food stocks [...] Without properly addressing the 3 Dimensional nature of the marine environment the plan favors developments that depend on one dimensional permanent spatial positioning and disfavors activities that require wide roaming area access to all dimensions of the marine environment subject to temporal and biological factors. Until this is categorically addressed then the strategic direction will be biased and be deficient in essential information (Orkney Fisheries Association, 2015).

The objective of participation in the ScotMap survey, was for fishermen to gain power in the MSP negotiations, by generating scientific support for their spatial claims. The experience, however, has been that the produced maps were not protective but could rather have negative implications for fisheries as other marine developers used the maps to justify their own spatial claims. For example, fish farm developers have used the maps to show that their desired sites would cause 'insignificant losses' for fisheries. This was based on information on the absolute value of fishing grounds. The ScotMap data would not show the value of these grounds as part of a mix of fishing activities in support of the whole income. Fishermen, therefore feel that decisions made based on this data could potentially be damaging for their sector (Bella, September, 2016). Main concern is that the produced data is not comprehensive enough to fisher practices and is thus an insufficient baseline for development. As I previously mentioned, fishing is a dynamic occupation which is highly adaptive to changing circumstances. It is thus not surprising that many fishermen feel that this data does not sufficiently represent their use and valuation of space. What is, for instance, worrisome to fishermen, is that the ScotMap data is a reflection of fishing activity in a specific time scale, whereas fisheries are flexible in time and space. Therefore, adequate data on fisher activities will require continuous re-evaluation (Kafas, 2014).

Marine Scotland actually have a very good database on where fishing happens, but it's quite static. Where we can approve on that on a local level, I think, is we can give a more dynamic idea of where fishing is. And how fishing processes are relating to the stock in a spatial kind of way. So that, I guess, is one of the substrates on which spatial planning can operate. It's all about providing that scientific basis, that evidence base, which the industry can use to defend its interests in a spatial planning context (Norman, November, 2016).

As maps are relatively static representations of reality, the risk in mapping for fishermen is that the maps are used to create new boundaries at sea (Toonen & van Tatenhove, 2013). By mapping current use of space, potential future use of space could thus be become restricted, reducing the flexibility of fishermen to operate. As I already mentioned, it is a challenge to capture the interests of fishers in MSP tools, such as maps. This is where scientists have the potential to become allies of fisheries in marine spatial planning negotiations (Jentoft & Knol, 2014).

It's going to take the fishermen and the scientists to get together and to build up the picture to see what is happening there. ... There is a wee bit of support for it [fisheries science], but again, its gathering enough information and obviously processing all the information. Meantime we are filling logbooks here about our landings and the likes and a lot of that information is being used in some statistics. But for example, there is no values put on the landings. So the socio-economic picture, it's not there. The financial picture is not there. To show the true value in a small place like this. I think, once you get that established. The Council might see the true value of the fishing industry in Orkney (Tom, October, 2016).

Although it is complex to capture this human-environment interaction in standard mapping practices, this is important for the empowerment of stakeholders (Jentoft & Knol, 2014). Inclusion of stakeholder knowledge and perspectives contributes to the understanding of this social dimension (Jay, 2010). If fishermen want to be heard (and seen), they thus have to be proactive in providing spatial information that matches their reality (Jentoft & Knol, 2014).

With the more mobile ones it's always going to be a bit more tricky because it's so weather dependent and secret fishing ground dependent and those things. Another thing that came around from the fishermen was there were these areas where they wouldn't be fishing at all but that would be areas where the fish would be breeding. So I accept it is important, I just don't think there is an awful lot of information to back-up that at the moment. And I think they also need to do a little bit of work. They are working on that, particularly in Orkney. They are quite good for thinking about what is important and they do get funding to do that research. Because otherwise you could say, it's all important. And that is of no use to us, because then you can't do anything. And it can't all be important. That is impossible. But you wouldn't want to be ruining a spawning ground just for lack of knowledge. But there needs to be back-up to what is being said. I think there needs to be give and take. Because you can say they need to be precautionary but when someone says the whole of that area is a spawning ground... something has happened in that area, what is the least bad bit of it? And that is the decision that is quite difficult. So you need your evidence to back that up (Wendy, November, 2016).

The challenge for Orkney's inshore shellfish fisher community is therefore to develop evidence for their cultural knowledge, human-nature relations and socio-economic value which resonates with the MSP discourse and information requirements. It seems the lack of consultation preceding the leasing of Orcadian sea beds by the Crown Estate and the dissatisfaction with inclusion of fisheries' perception of space in the Pentland Firth and Orkney Waters pilot plan have created an awareness of this challenge among fishers in Orkney. They have experienced their influence in the policy making process for the pilot plan to be relatively low, and have come to the realization that generating information on the fisheries can be a strategy to gain power in policy making. By getting involved in fisheries research, the fisher community is showing some forms of bridging social capital, which I will describe in more detail in the next paragraph.

7.2 BRIDGING SOCIAL CAPITAL IN ORKNEY

Fishermen in Orkney perceive their lack of influence on marine governance to be based on two things: their relatively weak socio-economic position compared to other marine stakeholders, such as the marine renewables industry, and the political undervaluation of their sector. In this paragraph, I will give two examples of how the Orkney inshore shellfish fisher community addresses these issues through bridging. Bridging refers to connections made beyond the community, to gain access to resources and move the community forward (Bærenholdt & Aarsæther, 2002).

The inshore shellfish fisher community in Orkney has showed several initiatives to connect with stakeholders outside of the community to strengthen their position. First of all, through fisheries research, the fisher community reaches out to external networks to mobilize resources in order to generate the evidence needed to support their spatial claims and strengthen their position in MSP negotiations. Secondly, the Orkney Fishermen's Society is undertaking several strategies to connect the Orkney fisher community with strategic partners in order to reach new markets. The objective of this outreach is twofold: to strengthen the economic position of the community and to reframe the community as a valuable player in the development of Orkney as a brand. The community thus uses bridging social capital to strengthen the position of the fisheries both inside and outside marine governance arenas.

7.2.1 FISHERIES SCIENCE IN SUPPORT OF MARINE SPATIAL PLANNING

As scientific evidence is taking up a central role in marine governance, fishermen have a less powerful position when they lack scientific grounding for their sectoral interests. If fisheries can't provide scientific evidence (for instance in the form of maps) to exemplify their spatial needs, they thus become a vulnerable party in marine spatial planning (Jentoft & Knol, 2014). In response to the experiences with mapping for marine spatial planning in Orkney, Orkney Sustainable Fisheries (OSF), Orkney Fishermen's Society (OFS) and Orkney Fisheries Association (OFA), on behalf of and in collaboration with Orcadian inshore fishermen, have set-up research initiatives to generate comprehensive scientific grounding for their spatial claims in the Pentland Firth and Orkney Waters. Orkney Sustainable Fisheries is an industry initiated and -led organization which manages the Orkney Lobster Hatchery, collaborates with and employs researchers for fisheries research and has taken up the function of Inshore Fisheries Group in Orkney (Bell et al., 2015; Simon, October, 2016). In 2010, briefly after the public announcements that Orcadian seabed were being leased for marine

renewables development, the Crown Estate announced a research collaboration between the European Marine Energy Centre (EMEC) in Stromness and the OSF. Objective of this project was to research potential mutual benefits of wave energy developments in Orkney, in which specially designed concrete blocks used for anchoring wave energy equipment could potentially function as habitats for juvenile lobsters. In this scenario, wave energy sites could function as no-take zones for lobsters, allowing them to grow and support healthy lobster stocks for the fisheries in the future. More recently, a longitudinal research was conducted on the interaction between marine renewables and inshore fisheries from a bio-marine stock perspective. This study delivered detailed spatial information for both sectors as well as information on the relation between stocks and fisheries distribution (Norman, November, 2016; Simon, October, 2016).

Marine energy devices will undoubtedly have an impact on inshore fisheries, and will in some areas, restrict the ability of fishermen to work historic grounds. We hope that this project will demonstrate that the industries can work together. By taking a proactive role with regard to sustainable fisheries management and practices – in this case by making a commitment and financial contribution to research and restocking – marine energy developers can work in co-operation with traditional marine users. This project, aided by Scottish Government funding, will add to our knowledge of the interactions between marine renewables and fisheries. It also has the potential to identify win-win opportunities for both sectors that will contribute to sustainable growth for Scotland (Stewart Crichton as cited in "Project aims to show that fishermen and marine renewables can co-exist," 2010, p.6)

The collaboration between EMEC and OSF is one example of the actions fisheries have undertaken in response to their perceived relatively weak position in the pilot plan negotiations. These studies were not part of the pilot marine spatial plan for the PFOW, but, as marine spatial planning will be taken forward in Orkney in the future, the objective is that findings from these studies will support fisheries' interests and will strengthen their position in future negotiations (Simon, October, 2016; Wendy, November, 2016). Through the work of the diverse fisher organizations in Orkney, the fisher community thus invests in fisheries science in support of their interests in marine spatial planning (Bell et al., 2015).

Fisheries research, not only contributes to the available knowledge in support of marine governance, it also contributes to the assets-base of the inshore shellfish fisher community, through the mobilization of assets. Through collaboration with research institutes, the fisheries access skills and knowledge needed to set-up, conduct and evaluate fisheries science. The reputation of these research institutes contributes to the credibility of the results and helps fisheries to mobilize financial resources, for instance through government funding (Bella, September, 2016; Simon, October, 2016). This collaboration is thus essential for fisheries to gain access to resources that are not readily available within the community.

Normally, what we do, because we want all our research to be robust to fit the ICS models, and we can use it scientifically in government circles so it can't be challenged, we use academics to analyse and help us design research models and methods. Because we happen to have very good scientists working at the Harriot Watt at the time, we use them a lot (Bella, September, 2016).

Through this built up experience, fishers become familiarized with the role of science in decision-making processes. In the past, science-based fisheries management in the form of the Common Fisheries Policy has done a lot of damage to UK fisheries. Although the biggest impact was for the demersal sector, this affair has created a great distrust among fishermen in government-led fisheries science (Williams, 2008), also among Orcadian inshore shellfish fishers. Objectives against such research were that the science was done by people who didn't know the marine environment the way fishermen do, they didn't use the right equipment and didn't conduct their research at the right locations. Had fishermen been leading this kind of research, the outcomes would have been completely different, is the overall assumption (Dennis, November, 2016; Morris, October, 2016; Tom, October, 2016).

And you certainly see it in Orkney, the university here is very clear that it is not providing science that is in any way undermining fishermen. We are doing it to support their agenda and working towards sustainability. I think, by and large, the fishing community accepts that and has that perception. And there is a perception that, particularly in Orkney, it is so much industry driven, so they are getting science to support something, help the industry get where it wants to go. That is not something to say, you are unsustainable, we need to stop you from doing this. There are always going to be individual fishermen who are not going to trust scientists, who are skeptical for example at the very idea that you can use a catch rate to do these things [stock and risk assessments]. Because they know intuitively that all the things that affect the catch rates, where they go, what is the state of the tide, where the wind is going, what the weather was like last Tuesday, all those things that

they are using. Sometimes intuitively, sometimes in more organized way, to drive where they go and what they see in their catch. They are very skeptical that you can take data from a fishery and that you can get any kind of idea about abundance. And they are right to be skeptical. Nevertheless I think most fishermen accept that science is good and desirable (Norman, November, 2016).

Collaborating with scientists to support the fisheries, thus helps take away the distrust that has been built up for top-down scientific research to inform fisheries policy. But there is another benefit to the collaboration between researchers and fisheries in Orkney. In previous chapters, I described how fishermen have a bad reputation when it comes to marine development. Policy makers feel like fishermen are unwilling to accommodate marine development. By collaborating with other maritime sectors, the fisher community is showing a willingness to investigate potential compatibility. It shows an acceptance that certain developments are inevitable and it allows fisheries to protect their own interests and potentially to benefit from these developments. As such, these collaborations could help rectify the negative image of fisheries in marine governance negotiations. But there are more ways in which fisheries science is used to reframe the image of fisheries in Orkney. Initiatives of the Orkney fisher organizations with regard to research and branding are used to put fisheries on the sustainable blue growth agenda. As such, the research is used to strengthen the socio-economic position of the fisheries and to recreate the image of fisheries. This strategy not only helps strengthen the economic position of the fisheries, it is also used to reframe the inshore fisher community from being a (potential) threat, to being a custodian of the sea, as I will describe in more detail below.

7.2.2 REFRAMING THE COMMUNITY IMAGE

Fishermen recognize that they will need to find positive ways to coexist with competitors for marine space and that on the broader front, accruing knowledge about the fishery will become an increasing part of the future sustainability of the inshore industry as environmental credibility takes greater hold among buyers and consumers (Fiona Matheson as cited in Taylor, 2013, p.6).

Fisheries research is not new in Orkney. Before the need for scientific evidence to address the competition over marine space became evident, the inshore fisheries were already active in setting-up fisheries research projects to support fisheries management and improvement projects. What's new, however, is that this research focused on sustainability of the sector, is now also used to reframe the community in the marine spatial planning context. Bottom-up initiatives to support sustainable fisheries, connect to new markets and strengthen the position of the fisher sector in Orkney, are used to 1) empathize the economic significance of the shellfish sector for the Orkney islands, and 2) to frame the shellfish fisheries as promoters of the Blue Growth Agenda, as I will illustrate below.

Primary objective of fisheries research is to generate evidence in support of fisheries management and fisheries improvement projects. This research is for instance used to legitimize bottom-up initiatives to increase the minimum landing sized for diverse shellfish species to sustain healthy fish stocks (Bell et al., 2015). Furthermore, the Orkney Fishermen's Society is actively pursuing initiatives to connect the shellfish sector with new markets and strengthen the economic position of the community. They do this by investing in research projects and partnerships to market Orcadian produce as sustainable, for instance by going for internationally recognized Marine Stewardship Council accreditation. Important strategic partners for this accreditation are World Wildlife Fund and UK retailer Marks and Spencer (Norman, November, 2016; Simon, October, 2016).

In terms of informing local management; if we want our fisher community to be empowered and to take responsible decisions about themselves they need to have a justification for doing that and the justification for doing that is robust local science collected by scientists who are working with fishermen in Orkney. So on the one level you have, and that is the most basic level, it has got to inform management decisions but to the outside world it undoubtedly makes the product more attractive (Simon, October, 2016).

To deal with some of the challenges that Orkney's geographic isolation creates for the shellfish sector, the OFS thus invests in branding to set Orcadian produce apart from bulk markets. As such, fishermen receive relatively high returns for their catches. Implementing high standards for Orkney catches ensures the long term sustainability of the stocks, and helps uphold the good reputation of the sector (Norman, November, 2016; Simon, October, 2016). In previous chapters I already described that fishermen in Orkney feel undervalued and overlooked, often due to negative previous experiences with marine governance decision-making and consultation. They feel that they have had an unequal position compared to other stakeholders in the pilot marine spatial planning process for the PFOW. In part, because they fear that these other stakeholders – particularly relatively new marine users such as the marine renewables sector – have a stronger economic argument than fisheries. Branding Orcadian shellfish as sustainable is thus not only

important for the commercial viability of the community, but it is also used to promote the fisheries as an important player in the marine environment.

The fact that at a local level here we have demonstrated that our fishing industry is based on sustainable practices, that we are looking to achieve MFC certification for our Fishery, that we have fishery improvement in place the Orkney inshore Fisheries are widely recognized within the UK. We've been at the forefront in terms of managing the resources, managing habitats. I think that has helped our position. [...] They [Marine Scotland] know what we are doing. I think they are quite pleased with the way things are developing in Orkney. I think in many ways we are taking the lead in a national context. We are not sitting and waiting for people to give us money to do things, we are getting on and doing things ourselves and that is always a big thing (Simon, October, 2016).

In past debates on marine development in the EU and UK, fishermen have been framed in media and public debates as a threat to the sea. Their practices were seen as detrimental to marine ecosystems and fish stocks. Many fishermen felt like they were under attack and protested that measures to protect the marine environment, such as fishing quotas, marginalized their sector. Fishermen thus seem to be stuck with a negative image. Their practices are seen as potentially damaging for ecosystems (Urquhart & Acott, 2013), whereas new maritime users such as the marine renewables sector are presented as supporting the sustainable development and blue growth agendas of the national government. In the context of sustainable development, fishermen can thus easily be seen as part of the problem. For the fishermen, this image is unjust. Their argument is that they have been fishing in Orkney for decades, they have always seen fluctuations in the natural environment, and they have seen the sector adjust and survive despite these changes. As such, in their opinion, fishermen are not part of the problem, but new marine users could potentially be (Chris, November, 2016; Dennis, November, 2016; Morris, November, 2016).



Fishing vessels in Westray, with salmon pods of aquaculture farm in the background

My overview quite generally is that the fishing industry recognizes that there is competition for Marine space, there are different demands on marine space and the Marine environment but often as an industry we feel that we have to justify ourselves. Whereas if there are special features that need to be protected that are still there although we have been fishing there for 100s of years, why do we need to justify ourselves? So it feels like the fishing industry needs to justify itself while in fact nothing has changed in the way we do things so it is not us doing something. The burden of proof should be on their party would rather than the fishermen having to defend themselves. I think that is the biggest feeling in this process (Simon, October, 2016).

The community research initiatives in support of sustainability are used to brand Orcadian fisheries outside the borders of the island community and to profile fisheries, not as a burden, but as a custodian of both natural resources and the local economy. They do this, for instance, by playing into an often voiced concern of islanders, regarding new marine developments. Responses to public announcements for wind and wave energy sites and aquaculture sites show that local communities are worried that they will carry the costs but not the greatest benefits of new marine developments. Concerns are, for instance, that marine renewables will impact the sea and landscape and consequently the tourism industry, but the economic returns from these investments will be transferred to the mainland of Scotland or even abroad. The inshore shellfish sector in Orkney seem to use their fisheries research and improvement initiatives to emphasize both their economic and cultural contribution to the local community to counter these concerns. In their responses to marine renewables developments in the PFOW – for instance in open letters in newspaper The Orcadian, in interviews and in responses to consultations - the Orkney Fisheries Association emphasized that the fisheries are a long standing historic tradition and are therefore entrenched in the island culture and communities. The fisheries are thus emphasized to be part of Orkney, and to be making a substantial contribution to island life. Using fisheries research, the fisher organizations signal that they are also actively contributing to the blue growth agenda by generating a new

market for Orcadian produce, thereby supporting the Orkney Island as a brand, and contributing to sustainable development objectives.

“Candidates [for OCI elections 2011] will be required to appreciate the complex inter—relationship between catching, processing, export, marketing and branding and how the sum of this value is paramount in preserving employment, autonomy and ultimately well-being in Orkney’s more fragile rural and island communities” (Fiona Matheson, secretary of OFA, as cited in "Orkney's fishing industry must be high on the candidates' priorities says association," 2011, p.11).

As the oldest and most comprehensive user of the sea round Orkney the omission of fishing interests is catastrophic for the future legitimacy of the plan and has from the outset impacted on the tenor of the plan. Fishing is not an ‘also ran’ to be ranked equally against leisure interests like surfing and sea angling. It is the oldest human activity associated with the marine environment, is a primary source industry supplying high protein healthy food for the population without using secondary sources to grow that food and is endemic to the survivability of an isles population whether 5000 years BC or in 25000 AD. Fishing should be ranked as the primary activity currently operating within the area and on the basis of its necessity for ancient and modern survival be evaluated accordingly. [...] Politically it has side-lined the oldest human activity existing in the marine environment which is fishing. This was probably not the intent but has become the situation and sadly compounded disappointment within the local industry that it is not valued as something that deserves historical, economic and cultural recognition. Akin to agriculture it is the second pillar of the Orkney economy which is durable and sustainable but is ranked only against ‘other’ stakeholders and not with the importance it deserves in its own right (Orkney Fisheries Association, 2015).

A lot of bigger industries, for example the fish farm industry, they tend to find the most cost effective way of doing things, and quite often it doesn’t involve the community in Orkney. They’ll get to a certain stage where the fish farming is so big, that they will just bring in the bigger boats and ... it might not be, but it looks like that is the way in which they want to evolve. The fishing industry will always have a strong hold here, just because of the nature of it (Tom, October, 2016).

Bridging social capital thus helps fishermen to reframe their community as a central and contributing stakeholder in marine development. Through the resources generated from collaborations with research institutes, the fisher community is not only trying to strengthen its economic position, but also its political position with regard to marine spatial planning. Bridging thus facilitates linking as it demonstrates the capacity of the community to generate information needed to inform spatial planning and it demonstrates a willingness to engage with marine development.

I think that undoubtedly helps and the fact that at a local level here we have demonstrated that our fishing industry is based on sustainable practices that we are looking to achieve MFC certification for our Fishery that we have fishery improvement in price the Orkney inshore Fisheries are widely recognized within the UK we've been at the forefront in terms of managing the resources managing habitats I think that has helped our position. I think if that wasn't the case we never would have been in such a strong position (Simon, October, 2016).

We tend to meet with Councilors, local council officers, politicians, fishery ministers.... You hope through time, when they are here in Orkney that they will start to take note that we are not here to ... that we take our responsibility. And I think, hopefully, within a generation we will be able to see a change. I can’t see it happening right now. It is moving in the right direction, albeit it being slowly. I think if there was a political will in Scotland to give the fishermen a bit more respect for what they’ve done in the last 20 years, I think that would be good (Morris, October, 2016).

7.3 CONCLUSION

To summarize, when the Crown Estate leased Orcadian sea beds for the development of marine renewables, it became apparent how a lack of information on spatial distribution of marine activities can lead to conflict. In response, the pilot marine spatial plan for the PFO was introduced. It was evident that more information was needed to inform policy-making and that stakeholders needed to be included to generate and interpret this spatial information. The generation, dissemination, interpretation and representation of information is not a neutral process, but an expression of power in marine governance negotiations. Maps, which are visual representations of reality, are a standardized tool for marine spatial planning and help create a shared understanding of marine space. As fishermen have a complex understanding of the marine environment, they have an interest in the way maps are produced and the way their activities are

measured and represented. Although fishermen in Orkney have participated in the generation of the maps that inform the pilot plan, there is still a lot of dissatisfaction with the way these maps capture fisher territories. The experience has been that misrepresentation can be damaging to the fisheries, through the allocation of space. As the lines on the maps are used to inform the distribution and development of marine space, fisheries are at risk of becoming excluded from traditional fishing grounds. In response, therefore, the Orkney fisher organizations have been active in setting up fisheries research. This research is aimed at several objectives. In the context of MSP, research is used to gather evidence in support of fisheries' interests. But fisheries also collaborate with new marine users in search for potential compatibility. As such, fisheries accept that emergence of new maritime users is inevitable, and they try to benefit from future marine developments. Second objective of fisheries research is to support fisheries improvement and management initiatives. Through bottom-up initiatives, such as increasing minimum landing sized of different shellfish species, the fisheries add value to their produce and contribute to the long term sustainability of the sector. Through accreditation, research is used to brand Orcadian shellfish as sustainable. This is an important strategy to strengthen the commercial position of the fisheries in Orkney. As such, fisheries research contributes to its third objective, to reframe the Orkney fisheries as sustainable, as key for marine development and as contributor to the blue growth agenda. Fisheries have historically has a bad reputation when it comes to sustainable development. Fisheries were often framed as a threat to the marine environment. By showing that the fisheries in Orkney are low impact and are promoting sustainable development objectives, the fisheries feed into a positive image of the sector. They emphasize their socio-economic and cultural value to island communities as well as their value in the marine environment. As such, they use science to reframe the understanding of marine space in marine governance negotiations, and reposition themselves as central stakeholders in the debate about the future development of the marine environment. Bridging social capital is thus used to create a strong basis to support linking social capital in the future.

8. COMMUNITY RESILIENCE IN ORKNEY AND MARINE SPATIAL PLANNING

This final chapter functions to synthesize the findings from the results chapters, and to return to the main- and sub-research questions. In the conclusion, I will answer these based on the findings from the fieldwork, followed by a discussion on the relation between power and participation. In the final paragraph I will reflect on some of the research methods.



Old life Buoys of fisher vessels in Westray, Orkney

8.1 CONCLUSION

Objective of this thesis has been to gain more insight in the relation between social capital and fisheries' participation with marine spatial planning. Based on the assumption that the inshore shellfish fisher community in Orkney possesses community assets and agency to act as an agent of change, I have researched in what ways expressions of the three forms of social capital - bonding, bridging and linking - by the inshore shellfish fisher community relate to fishers' participation with the pilot marine spatial planning processes which took place from 2010 to 2016 for the Pentland Firth and Orkney Waters. My main research question has been:

Does the Orkney inshore shellfish fisher community display community resilience through the use of social capital to be involved in and influence marine spatial planning?

To answer this question bluntly: no. Members of the inshore shellfish fisher community in Orkney have clearly expressed their dissatisfaction with their ability to participate in and influence the pilot marine spatial planning process for the Pentland Firth and Orkney Waters. Although there is social capital available in the fisher community, they have not displayed resilience to use these forms of social capital to gain power in the marine spatial planning process. Community resilience in the Orkney inshore shellfish fisher community is primarily displayed through bonding and bridging social capital. Bonding social capital allows the community to collaborate and work towards shared goals. Through bridging, the community mobilized resources beyond its own community assets and uses these to work towards these shared goals. However, linking social capital has shown to be weak in Orkney. Although there are fisher organizations which represent fishermen and connect to governance arena's to present fisheries' interests, the inshore shellfish fisher community has not been able to effectively mobilize this linking social capital to gain access to power in marine spatial planning.

8.1.1 ANSWERING THE SUB-RESEARCH QUESTIONS

Let's take a step back, and look at the sub-research questions, and how these have been answered in the results chapters.

- 1. In what ways has the Orkney inshore shellfish fisher community been involved in the development of the pilot Marine Spatial Plan for the Pentland Firth and Orkney Waters?**

As was described in chapter 4, the policy framework for the pilot PFOW MSP was designed to allow for stakeholder participation in several stages of plan-making. Participatory strategies ranged from informing to consultation. The pilot

PFOW working group developed a database of key stakeholders in the plan scheme phase, which was regularly updated as the planning process continued. Stakeholders in this database were regularly updated on the progress and on opportunities for further participation. In addition, the public was informed on the pilot plan, public consultations and public events through diverse media, such as government websites, posters and local newspapers and radio (Marine Scotland, 2012b; Pilot PFOW Working Group, 2016).

The Orkney Fisheries Association and Scotland Fishermen's Federation have given thorough written feedback on the formal consultations during the plan process. The Orkney Fisheries Association has also been present at diverse meetings in Orkney and on the Scottish Mainland and has had direct contact with members of the working group regarding the pilot plan (personal communications, September, 2016). The Orkney Fisheries Association has thus acted as a representative body for the inshore fisheries and has guarded for fisheries' interests in the pilot plan texts and policies. Through the OFA, fishermen were informed about the pilot planning process and were invited to attend public meetings or to respond to consultations, when deemed necessary (Bella, September, 2016). Some fishermen have also participated in workshops and information events, where they came to be informed or to voice their concerns with the pilot plan. There have been no written responses from individual fishermen on formal consultations (JG, October, 2016; JH, November, 2016).

For the pilot marine spatial plan for the Pentland Firth and Orkney Waters a participation scheme was set-up to ensure good governance. In the interviews, fishermen and the representatives of fisher organizations emphasized that they felt they had been informed about the planning process in a too late stage, had been involved too little and had had too little power to influence the final pilot plan. Policy-makers involved in the working group that drafted and wrote up the final pilot plan, also indicated that participation of fisheries could have been improved (JG, September, 2016; TM, November, 2016). One of the lessons learned by the working group has been that setting-up a meaningful participatory process requires a lot of resources (Marine Scotland, 2016). Both fishermen and policy-makers indicated to lack the capacity to ensure meaningful participation during the pilot marine spatial planning process for the PFOW. For fishermen, marine spatial planning is complex and participation requires an investment of time, money and energy (FM, September, 2016; SC, October, 2016).

When looking at the different types of participation, there has thus not been an opportunity for engagement in the pilot marine spatial plan. Although there was room for participation in the design of the pilot plan, this participation was primarily directed by the working group instead of a thorough involvement of stakeholders in agenda-setting, decision-making and policy-making. The working group did, however, make an effort to respond to input from consultation and incorporate contributions in the final plan. On an individual level, participation in the pilot plan has been low among fishermen of the inshore shellfish fisher community, with most involvement coming through the fisher organizations.

2. What have been the key interests of the inshore shellfish fisher community in the development of the pilot Marine Spatial Plan for the Pentland Firth and Orkney Waters and in what ways has the inshore shellfish fisher community put these interests forward in the governance process?

In interviews members of the inshore shellfish fisher community and formal representatives of fisher organizations in Orkney, expressed diverse interests of the fisher community with regard to marine spatial planning. In chapter four, I grouped these interests into two main categories; namely reframing spatiality and repositioning the community in MSP negotiations.

The first category referred to concerns fishermen in Orkney have for the misrepresentation of fishers' reality, spatial needs and perception of space in fisheries policies. Their main concern is that tools for marine spatial planning, such as two-dimensional mapping of space, and research used to inform marine spatial planning are not compatible with the multidimensional, dynamic and complex relation fisheries have with marine space (Orkney Fisheries Association, 2015).

The second concern regards the relatively weak position fishermen perceive to have in marine governance negotiations. Fishermen fear that they have a relatively weak economic argument compared to other marine users, such as the marine renewables sector and the aquaculture sector. Furthermore (and related to concerns for spatiality in MSP), fishermen are concerned with the disproportionate burden of proof they have with regard to sustainable marine development. In the pilot MSP for the PFOW, fishermen are framed as subjects of governance, as opposed to drivers of sustainable marine development. In addition, in the past, fishermen have often been framed as a threat to marine ecosystems. As such, fishermen have low levels of trust in both governance authorities and their own ability to influence decision-making processes.

The concern fishermen have towards spatiality in marine spatial planning have been voiced in the various consultations. In discussions, participating fishermen have tried to explain their spatial needs and perceptions (Bella, September, 2016). In the research and scoping phase of the pilot marine spatial planning process, fishermen have participated in the ScotMap research by Marine Scotland Science. For this research, they provided spatial information and information on catches in the Pentland Firth and Orkney Waters. However, in the final results, fishing grounds were primarily measured as sites with highest fishing activity and highest catch rates (Marine Scotland, 2012). For fishermen, these results were too narrow and the Orkney Fishermen's Society, Orkney Sustainable Fisheries and Orkney Fisheries Association have invested in and engaged in research collaborations to set up fisheries' science to support their spatial claims and provide support for their dynamic perception of space (Karen, October, 2016; Norman, October, 2016). Furthermore, this research is used to support fisheries' improvement projects to strengthen the economic position of the community as well as to reframe the image of the inshore shellfish sector (Simon, October, 2016).

3. In what ways can the involvement of the inshore shellfish fisher community in the governance process be characterized according to the three forms of social capital: bridging, bonding and linking?

As described in chapter five, the Orkney inshore shellfish fisher community possesses different community assets which interact with one another, and which are mobilized to influence the position of the community. In interviews, community members described distinct community norms and values which shape the community identity. Through cultural processes, such as socialization, these norms and values are reproduced to ensure the continued existence of community culture (Chris, October, 2016; Tom, October, 2016). However, changes are occurring in the social composition of the fisher sector, which are starting to influence the social relations and interactions within the community. Community members have indicated that they feel that their social ties are weakening, due to these changes (Dennis, November, 2016). But, at the same time, these changes, which are experienced as a threat to the *real* fisher community, are used to strengthen the symbolic boundaries of the community and as such to strengthen internal community cohesion. Social cohesion is an indicator for bonding social capital. The research findings indicate that though different social processes, bonding social capital is simultaneously strengthened and weakened in the inshore shellfish fisher community in Orkney. Overall, however, bonding social capital seems to be used to enable the community to work towards community objectives through collaboration, for instance through fisher organizations. As such, the community is showing community resilience, as bonding social capital is mobilized to work towards community objectives. As such, bonding social capital forms a basis for linking, whereby the community tries to voice its shared interests in marine governance arenas. Furthermore, fisher organizations can be seen as an outcome of bonding social capital, whereby the organizations function as a node in the social network of the community.

Both fishermen and policy-makers indicated that the fisher organizations in Orkney are important forms of social organization which link fishermen with governance processes and actors. For policy-makers, these organizations are a welcome representative party, which is able to speak the language of marine planning, respond to consultations in a desirable manner and facilitate communication to fishermen who often live in peripheral areas and are difficult to get in touch with (Wendy, November, 2016). For fishermen, the organizations keep track of the legislation and policy changes that could potentially affect the community, it gives a voice to local community needs (Chris, October, 2016; Dennis, October, 2016) and mobilizes resources to strengthen the economic and political position of fishermen (Tom, October, 2016). Based on the low levels of trust between fishermen and policy-makers, the inability fishermen have shown to access sources of power in policy-making and the relatively weak linkages that have been established between fisheries and policy-makers, it can be concluded that linking social capital has been weak for the inshore shellfish fisher community with regard to the pilot marine spatial plan for the Pentland Firth and Orkney Waters. Fisher organizations have nonetheless played an important role in linking fisheries and governance stakeholders and have been able to put fishers on the table as important stakeholders in marine spatial planning. For future marine planning, fisher organizations could thus potentially play a bigger role in linking to stimulate fisheries participation.

To gain power both within and outside the domain of marine governance, the fisher organizations also play an important role in bridging between the fisher community and research institutes, to generate fisheries science to inform fisheries improvement projects, to support spatial claims for marine spatial planning and to reframe the inshore fisher community as a key player in the marine environment and as a contributing sector to blue growth. The inshore shellfish fisher community has thus shown to be resilient mobilizing bridging social capital to strengthen the voice of fishermen and reposition fishermen as a powerful stakeholder in marine governance negotiations. As such, bridging may prove to be an important strategy and contributing factor to the further development of linking social capital for the inshore shellfish fisher community.

8.2 DISCUSSION

When setting up the research proposal for this thesis, the inshore fisheries of the Orkney Islands triggered my attention with the commotion that followed the leasing of sea beds around the Orkney Islands, which was considered by fishermen to be a direct threat to their livelihoods. Reading about the need for a marine spatial plan to manage competition over marine space, I imagined the Orkney Waters as contested space where diverse marine users were fighting for their rights and freedoms. I expected marine spatial planning to be high on stakeholders' agenda's and the debate on the development of the marine environment to be lively and ongoing. Arriving in Orkney, however, reality struck fast. Life on the islands has a different pace compared to Amsterdam; the seas are usually still, unless the characteristic Scottish weather determines otherwise. There is little visible conflict in the Orkney waters and I soon discovered that fishermen are not dealing with marine spatial planning in their daily lives. Moreover, many fishermen I spoke with were not dealing with marine spatial planning at all. For many fishermen the pilot marine spatial plan was another far-fetched policy issue - something to deal with when it started to directly affect their fishing practices. Many fishermen consider dealing with marine policies and governance to be a task for the fisher organizations. For fishermen going out to catch, making a living and being able to sustain themselves and their families are their main priorities. At the level of individual fishermen, there thus hardly seems to be a debate or negotiation over contested space. Of course there are concern, regarding the environmental impact of new marine users and losing access to fishing grounds, but without the urgency of direct threat (for example in the form of marine renewable test sites being developed), fishermen prefer to leave governance negotiations to the experts. These negotiations over the (future) development of the marine environment has and continues to take place on a more abstract, governance level. The assumption that there is active citizenship and a readiness to participate and influence political agendas in participatory governance arenas, may be an overestimation of political engagement of citizens. Participation requires a (pro-) active civil society. But it would be too simple to conclude that fishermen have not been pro-active enough in trying to gain power in governance negotiations.

8.2.1 COMMUNITY RESILIENCE, SOCIAL CAPITAL AND SITUATED AGENCY

Starting point of this research has been community resilience theory. There are a few assumptions underlying this theory. First of all, there is the assumption that communities possess different community assets which can be mobilized to pursue community objectives (Magis, 2010). Second assumption is that community assets create opportunities – or community capacity - to act (Pelenc et al., 2015). As such, community assets create a basis for agency (Mathie & Cunningham, 2005). As described in the theoretical framework, agency performs an important function for community resilience. Agency refers to the ability of actors to make purposeful decisions and drive change. As such, agent exercise power to reach specific objectives (Bebbington, 1999; Pelenc et al., 2015). Community resilience theory, in short, thus describes the relation between community assets, capacity and agency. The theory describes how communities possess different kinds of assets and make trade-offs to gain access to assets, build on assets and mobilize assets towards community objectives. Community assets thus create opportunities for action, giving them the ability to pursue goals and allowing the community to respond to changes (Magis, 2010). In the context of this research, this les to the hypothesis that, as a resilient community, the inshore shellfish fisher community would use its (linking) social capital to gain power to influence governance processes to safeguard its own interests.

As this research has shown, however, the relation between community assets, community agency and community resilience is not so straightforward. Although there are community assets present within the community which are used for diverse community objectives, social capital has proven to be not be so easily mobilized. The three forms of social capital can be recognized in the inshore shellfish fisher community, but the community has also shown a lack of agency to mobilize its linking social capital to gain power in marine spatial planning negotiations. In other words, having social capital, does not equal being able to mobilize social capital and having agency to act.

Agency exists and is exercised in a social context. This means that there are social and formal structures in place which shape opportunities for action and which shape human behavior (Cleaver, 2007). Behavior can thus not be seen in isolation of its social and political context. Moreover, people perform diverse social roles simultaneously, whereby they relate to the boundaries of social institutions (social rules, norms, beliefs) and perform behavior which is an outcome of interaction between different roles, rules and behaviors (Behagel & van der Arend, 2012). This is what Arts, Behagel, van Bommel, de Koning, and Turnhout (2012), refer to as *situated agency*. Human behavior is thus constrained and shaped by existing social roles, interactions and institutions. These institutions prescribe formal and informal *rules of the game*, or accepted ways to act. In other words, institutions are the structure in which behavior takes place. At the

same time, institutionalizes structures are (re-) produced through human behavior. For example, as institutions embody social processes and prescribe socially accepted behavior, they can shape desired ways of participation and negotiation, whereby stakeholders perform specific roles which represent underlying social relations. Through performance of these roles, these social relations and institutions are re-produced and manifest themselves. Participatory practices thus takes place in and are shaped by their social, political and cultural context (Behagel & van der Arend, 2012) and the plurality of spheres in which these interactions take place (Cleaver, 2007). These contexts both enable and constraint the ability of individuals to act and the practices actors can perform (Behagel & van der Arend, 2012).

8.2.2 SPACE AND POWER TO PARTICIPATE

With the development of a participatory governance framework, new institutions for public participation are created, as well as physical spaces where governance negotiations can take place (Behagel & van der Arend, 2012). Participatory institutions, for example, describe rules of conduct regarding how people are supposed to respond to consultations and how negotiations are supposed to take place (Cleaver, 2005). Cornwall and Coelho (2007), refer to this as *institutionalizing participation* and the construction of a *participatory sphere*, whereby new space is created for citizen engagement. This space refers to the **system** - being a governance framework and the physical and interactional spaces - where state and civil society can meet. In this space, information and knowledge are exchanged and negotiations take place. Apart from negotiating the subject of governance, the participatory sphere also functions to re-shape the relations between state and civil society, whereby civil society actors take up the role of engaged citizens who partake in shaping and implementing policies (Cornwall & Coelho, 2007; Gaventa, 2006).

Although the principles of participatory governance assume that citizens have agency to act and engage with socio-political practices, whereby they have the ability to make autonomous decisions (Cleaver, 2007), the participatory sphere is a semi-autonomous and – in the case of the pilot marine spatial plan for the Pentland Firth and Orkney Waters - *invited* space (Cornwall & Coelho, 2007). This means two things; (1) interactions taking place in the participatory sphere are shaped by social roles, practices and formal and informal institutions. Although participation presents an opportunity to create new relations between governance actors, participants don't enter the participatory sphere as neutral players. Their position is influenced by their roles outside of the governance arena and thereby shaped by established socio-political positions and unequal access to resources and power, making the participatory sphere one of simultaneous contestation and collaboration (Behagel & van der Arend, 2012; Cornwall & Coelho, 2007). (2) The participatory sphere is created by governance authorities who determine the *rules of the game* for participation in this sphere. As such, boundaries are determined which describe how and when stakeholders are allowed to participate and in what ways. This is in line with findings by Smith (2015), regarding the creation of a mentality of space to legitimize marine spatial planning for the Pentland Firth and Orkney Waters. As he describes, apart from creating an imaginary of space, a physical space was developed, where stakeholders would meet for discussion and consultation. In these spaces, the subject of governance was problematized, and marine space was re-imagined as a governable object. Here, a spatial discourse was created and technologies such as maps were used to define and institutionalize the subject of governance. For stakeholders to be able to participate, they had to fit participatory roles and act within the boundaries of the participatory process.

The development of participatory spheres thus creates an opportunity for civil society actors to engage in new relations and interactions with the state, and to act in order to influence policy processes. However, these spheres are not neutral places nor can they be considered level playing fields for equal dialogue (Behagel & van der Arend, 2012). First of all, participatory spheres are purposefully created invited spaces where governance authorities establish the rules of the game, creating boundaries for participant behavior (Cornwall & Coelho, 2007; Gaventa, 2006). Secondly, stakeholders entering the participatory sphere act based on established social roles, interests, existing formal and informal institutions and based on interactions between the participatory sphere and its social, political and cultural context, as well as based on interactions with other actors within the sphere (Arts et al., 2012; Behagel & van der Arend, 2012). Finally, as participation is not a neutral or ordered process, being invited into the participatory sphere does not mean being able to exercise agency (Cornwall & Coelho, 2007). As such, situated agency describes human behavior in a complex social context, whereby their ability to act is influenced by (unwritten) social norms and rules and the room people have to maneuver between these rules and determine their own course of action (Arts et al., 2012; Behagel & van der Arend, 2012). As agency is not about decision-making but about the ability to make choices (Cleaver, 2007), vulnerable social groups may find themselves less able to create this room to maneuver. When hegemonic powers are reproduced in participatory processes, and vulnerable stakeholders lack the voice to influence decision-making,

participation can function to legitimize the status quo, as opposed to transforming governance relations (Cleaver, 2005; Gaventa, 2006). There is thus no such thing as a *level playing field* in governance negotiations. And setting up a participatory design is not enough to create legitimate policies (Behagel & van der Arend, 2012). To ensure meaningful participation, stakeholders must be given the chance to influence the parameters for participation (Gaventa, 2006).

8.2.3 PARTICIPATORY MARINE SPATIAL PLANNING

Reading the conclusions of this thesis, one should bear in mind that the pilot marine spatial plan for the Pentland Firth and Orkney Waters was primarily initiated to develop and test a new governance framework. This governance framework continuous to be developed and adjusted to regional needs, as stakeholders familiarize themselves with Marine Spatial Planning discourse and thinking. As Smith (2015), puts it, the more stakeholders get used to thinking and talking about marine space, the more MSP becomes accepted as a tool for marine governance. An important outcomes of the pilot process has thus been the stimulation of discussion and a spatial kind of thinking among marine stakeholders (Jentoft & Knol, 2014; Johnson, 2011; Johnson et al., 2015), through meetings and consultations. The diversity of perceptions of marine space and the diversity of interests in its development forces stakeholders to discuss the subject of governance. In these discussions space is objectified (through mapping and discourse) to become a governable object (Smith, 2015). This is in line with what members of the pilot PFOW working group described as one of the main outcomes of the pilot. They stated it has opened up a dialogue among stakeholders about spatiality and planning and has created a general understanding of marine planning discourse and processes. As such, it has facilitated interaction between different stakeholders and should function as a stimulus for continued dialogue to minimize user-user conflicts in the future (JG, October, 2016; TM, November, 2016). This research has, however, also shown that this dialogue is one of unequal power. In addition, as the discussion about situated agency, power and participation, shows, fishermen are not free goal-oriented agents of change, but they act in a myriad of constraining and facilitating institutions which shape their capacity and agency. To overcome these constraining institutions requires capacity. By virtue of socio-political position, some actors are better positioned to access resources and mobilize power than others (Cleaver, 2007). In the dialogue of unequal power, fishermen have shown to lack the capacity to overcome constraining factors (both informal institutions such the mental barriers described in chapter six, and formal institutions such as the discursive and participatory barriers described in chapter seven). Without a statutory marine spatial plan in place, negotiations about the use and further development of the marine environment around the Orkney Islands, continuous to take place in different arenas. As fishermen have a high stake in these negotiations, much work remains to be done, in working out the connections between power and linking social capital in marine spatial planning participatory structures and dialogues.

8.3 REFLECTIONS ON METHODOLOGY

When I left for Orkney, early in September 2016, I was still finalizing my thesis proposal. Although the case study for my research was clear, I had not yet developed a finalized theoretical and conceptual framework to inform my research. During my stay in Orkney, I reflected on the implications of this for my research findings. While I was in Orkney, I continued to conduct a literature review on marine spatial planning, community resilience and social capital to build on the theoretical grounding of my thesis and gain more insight in the functioning and measurement of the concepts and indicators. This led me to continue to develop my interview guides and to reevaluate my sub research questions and research objectives during my fieldwork. Having a clearly defined research proposal is an important tool to create structure. During my fieldwork, I noticed that not having this clear structure created some uncertainty regarding the link between research methods and objectives. It made my approach more deductive and may have led to a more descriptive and explanatory research. On the other hand, a stringent research proposal can also inhibit a researcher from being flexible in approach and can lead to specific research expectations and assumption which may not necessarily be compatible with the fieldwork reality (Boeije, 2005). I found, not having a finalized research proposal allowed me to really scope what was going on in Orkney and to adjust my methods accordingly. While conducting the interviews, for instance, I used both preliminary findings from earlier interviews and observations and findings from my ongoing literature review, to adjust my interview guides. I personally believe this has improved the quality of my approach.

An important limitation to my research has been the size of my data sample. Over the course of ten weeks, I conducted thirteen interviews, documented several personal communications, one participant observation and several distant observations, in addition to the literature and document reviews. There is a strong bias in my data towards older fishermen (40+) and towards fishermen who had some connection to one of the fisher organizations on the islands. Important to note, however, is that there are also fishermen in Orkney who deliberately chose not to be a member of any sort of organization. Some of them because they do not believe in this kind of social organization, and because they

idealize the independent and individualistic character of fishing (FM, September, 2016), and others because they do not agree with the mandate or organizational structure of these fisher organizations (TM, November, 2016; Personal communications, November, 2016). These fishermen may thus present an alternative voice for the fishermen in Orkney and may be less connected with the fisher community as I described it in this thesis. One of the members of the working group for the pilot plan describe how these fishermen were very explicit about the fact that the existing fisher organizations do not represent all the fishermen in Orkney, and were very keep on being involved on their own accord. For future research, it will be interesting to see how these fishermen use linking social capital to connect with marine spatial planning arenas without being part of a formal social organization.

Another aspect of this research that requires some critical reflection, is the assumption of homogeneity. I have researched social capital as a community asset, assuming social capital is produced in interactions that take place within the social networks of the community, between the community and other communities and between the community and scales of governance. This approach sees social capital as a community resource: as shared asset. However, social capital can also been seen as belonging to an individual, whereby some individuals may possess more or stronger social capital than others. It is important to note that there is no such thing as homogeneity in communities. I have taken the inshore shellfish fisher community to consist of all the fishermen who work the under 15meter vessels, fish the inshore waters of the Orkney Islands for shellfish and crustaceans and who land in the island harbors. However, there is a wide diversity between these fishermen. Not only in their norms and practices, but also in their connections with other fishermen across the Orkney Islands. Although the Orkneys may seem small, the islands are highly peripheral and physically meeting fishermen who live on the outer islands can be challenging. Do to justice to the diversity of social capital in the inshore shellfish fisher community, further research to the diversity of this community would be valuable.

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APPENDICES

I. RESPONDENTS

Respondent	Pseudonyms	Amount of respondents
Representative fisher organization	Adam, Bella, Simon	3
Orkney inshore shellfish fisherman	Chris, Dennis, Earl, Morris, Sander, Tom	6
Member working group pilot MSP PFOW	Damien, Wendy	2
Researcher	Karen, Norman	2
Total		13

II. INTERVIEW GUIDES

IIA. FISHERS

[Introduction of myself (me, studies, research); purpose of the interview (if needed explain relevant terms, such as ‘marine governance’); duration of interview; use of interview (recorded, transcribes, part of larger database, anonymous, if desired transcription can be reviewed by interviewee)]

Opening questions:

Topic	Question	Probes
Fisher community	Could you please introduce yourself, and tell me about how you got into fishing?	<ul style="list-style-type: none">- Place of birth/ age/ years at sea etc.- Type of fishing/ type of boat/ boat ownership/ main port/ main fishing grounds- Family history in fishing?- Full-time/part-time, other occupations?
	Could you describe your average workday to me?	
Values	What are your favourite aspects of fishing?	<ul style="list-style-type: none">- What motivates you/ what makes inshore shellfish fishing in Orkney unique?- [If positive aspects can be influenced] What do you do to maintain these positive aspects of the job?
	What are your least favourite aspects of the job?	<ul style="list-style-type: none">- How do cope with negative aspects of the job?

I'd like to ask you some questions about the inshore shellfish fisheries in Orkney:

Topic	Question	Probes
Social Capital (bonding)	How would you describe your relations with other inshore shellfish fishermen in Orkney?	<ul style="list-style-type: none">- Professional/ personal relations?
		Professional (colleagues): <ul style="list-style-type: none">- What would you consider the added value of these relations for your work/ can you give an example in which you benefitted from having these relations?- What are the main topics you discuss with these colleagues?- When/where/how often do you usually meet these colleagues? Personal (friends):

		<ul style="list-style-type: none"> - Are there colleagues with whom you have a personal bond? - When/ where/ how often do you usually meet these colleagues/ what topics do you discuss?
Fisher Community + Social Capital (bonding)	How would you describe the inshore shellfish fisheries community of Orkney?	<ul style="list-style-type: none"> - Relations between fishermen/different ports/different islands? - Distinguishing characteristics from other fisheries (boundaries)? - Are there specific traditions which are important for the community? - What do you consider as a strength/ weakness of the community?
Social Capital (values)	In your opinion, what does it mean to be a 'good fisherman' in Orkney?	<ul style="list-style-type: none"> - Do you feel that this idea of what it means to be a 'good fishermen' is shared among the community? Please explain/ give example

The next topic I want to discuss is fisheries organizations.

Topics	Question	Probes
Social Capital (bonding + bridging)	<p>Are you part of any fisher organizations?</p> <p>If yes, which one(s)?</p> <p>(Example; Orkney Fisheries Association/ Sustainable Fisheries Ltd./ Orkney's Fishermen Society/ Scotland Fisheries Federation etc.)</p>	<p>If yes (if multiple, distinguish different organizations):</p> <ul style="list-style-type: none"> - Motivation to become a member? - Benefits of being a member for you personally? - What would you consider to be the main task of this organization? - Do you feel this organization is succeeding in this task? Why yes/no? - In what ways do you participate in this organization? (Attend meetings, pay contribution, vote on topics, set agenda, no active participation, etc.) - Are your professional/personal relations also members of this organization? <ul style="list-style-type: none"> o If yes, how would you describe their involvement? How does your mutual membership of this organization influence your professional/personal bond? <p>If no:</p> <ul style="list-style-type: none"> - What is your general impression of existing fisher organizations? - Why do you think other fishermen are members of fisher organizations? - If you were to become a member of a fisher organization, what would you describe to be its primary tasks and what would be your role within this organization? - Are your direct colleagues/ friends members of fisher organizations? - Do you feel that not being a member of a fisher organization influences your position within the community? Please explain (social, financial, political, etc.)

Topics	Question	Probes
Marine Governance + Social Capital	Are you familiar with the <u>pilot Marine Spatial Plan for the Pentland Firth and Orkney Waters?</u>	<p>If yes:</p> <ul style="list-style-type: none"> - Could you describe in your own words what this plan entails? - Could you describe how you first got informed about this plan and what you know about how this plan has been developed? <ul style="list-style-type: none"> o Have you discussed the development of this plan with other fishermen? (through own network or fisher organization network) o What would you describe was the general response from the community to this plan/ what were the main concerns? - (if familiar with the development process/outcomes) Do you feel the interests of the inshore shellfish fisher community have been well represented in the development of the plan/in the final plan? Please explain. - Have you personally been involved in the development of the plan? Please explain as detailed as possible in what ways - (If no personal involvement) Would you have liked to be involved in the development of this plan/ in what ways should Orkney shellfish fishermen have been involved?
Bonding		
Values + Interests		
Linking, Participation		<p>If not [give brief explanation/ move on to next question]:</p> <ul style="list-style-type: none"> - How come, do you think, you have not been informed about the pilot marine spatial plan? - Now that you've heard about it, what do you think about this initiative? <ul style="list-style-type: none"> o Benefits/ concerns/ impact on fisheries, environment, economy, policies
Output legitimacy	When you think about the interests of the inshore shellfish fisher community, regarding the development of marine space around Orkney, do you feel MSP could be a useful tool for marine governance?	<ul style="list-style-type: none"> - What would be the benefits of MSP for Orkney? - In what ways can/does MSP (not) support fisheries' interests around Orkney? Please explain. - If not in favour of MSP; how do you feel development of marine space around Orkney should be governed? What would be the role of fishermen in this form of governance?
Marine Governance; participation, interests, social capital (bonding, bridging, linking)	[For those not involved with the pilot MSP] Do you have personal experience with marine governance? (Example: marine protected areas, quota schemes, environmental impact assessments for aquaculture, etc.)	<p>If yes, could you describe your experience?</p> <ul style="list-style-type: none"> - Context, - What was your interest (motivation to participate), - Who were involved, - What was your role,

		<ul style="list-style-type: none"> - How did the process evolve (interactions, conflict/collaboration/negotiation/repositioning/ reframing/ changing relations over time), - What are the main outcomes, - How do you evaluate these outcomes, - Do you feel you have been able to influence the process, please explain, - Looking back what would you have done differently?
Marine governance; participation, social capital (linking)	In general, do you feel that you as a local fishermen are able to influence governance processes in Orkney? Please explain (if not, what should change)	<ul style="list-style-type: none"> - Ability to influence decision-making processes in (marine) governance in Orkney? (individual/ as community) <ul style="list-style-type: none"> o If positive: what are facilitating factors? o If negative: what is obstructing the ability to influence? (social organization, time, money, motivation, political power, opportunities for participation, reputation of fishermen.....?) - Are you satisfied about the representation of fishermen (by fisher organizations) in policy-making processes? Please explain. - Personal ability and motivation to participate (time, money and other resources to attend meetings, understand topics, etc.)?

I'd like to ask you a couple more questions about the future of inshore shellfish fisheries in Orkney.

Topic	Question	Probes
Community resilience; assets, capacity, change	Thinking about current marine developments around Orkney, what do you expect the inshore shellfish sector will look like in 20 years?	<ul style="list-style-type: none"> - Main challenges and opportunities <ul style="list-style-type: none"> o From fisheries/ environmental/ economic/ political perspective - Looking at the inshore shellfish community, in what ways do you think the community is capable to cope with these challenges and seize opportunities? - In what aspects in the communities currently unprepared to face these challenges/ seize opportunities?
Community resilience; social capital, change	[If not yet answered] How do you expect these sectoral changes will influence the fisher community?	Social ties/ social organization/ boundaries of the community/ values/ etc.

Community resilience; assets, social capital, change	<p>[For fishermen with many years of experience in the sector]</p> <p>Looking back to when you started as a fisherman, what have been the biggest sectoral changes you have been faced with? Please describe an example that has been important for you as a fishermen</p>	<ul style="list-style-type: none"> - What was happening - Personal response - Community response - How has this influenced your work at the time/ today - Do you feel the inshore shellfish sector has benefitted from/ been disadvantaged by/ responded well to this change? Please explain
	<p>What would be your main advice for the next generation of fishermen looking to get into the inshore shellfish sector in Orkney?</p>	

IIB. REPRESENTATIVES OF FISHER ORGANIZATIONS

[Introduction of myself (me, studies, research); purpose of the interview (if needed explain relevant terms, such as ‘marine governance’); duration of interview; use of interview (recorded, transcribes, part of larger database, anonymous, if desired transcription can be reviewed by interviewee)]

Opening questions:

Topic	Question	Probes
	To start, could you please give me a brief introduction of yourself and how you came to work for this organization, what is your specific function within this organization?	<ul style="list-style-type: none"> - How long have you been working here? - What are your favourite/ least favourite aspects? - What were your previous experiences? - Do you have a personal connection to the fisher industry?
Interests	Could you please tell me a bit more about this organization?	<ul style="list-style-type: none"> - How did it come to exist: whose initiative - Activities of the organization - Main objectives of the organization - Target group of the organization (members and collaborative partners)
Bonding	Could you please tell me a bit more about the members of your organization?	<ul style="list-style-type: none"> - How many members? - Where are most members from? - How do you keep in touch with your members? - Are there member meetings? Where, how often, who attend, what topics, how are members informed, please describe - How would you describe the general involvement of members with your organization? - What does your organization do to stimulate involvement of members? - What seems to you to be the main topics of interest of your members?

Your organization acts, among other things, as a representative for the Orkney fisheries. I’d like to talk about the role of your organization in marine governance processes.

Topic	Question	Probes
Marine governance	First of all, how would you define marine governance?	
Linking	In what ways is your organization currently involved with marine governance processes?	<ul style="list-style-type: none"> - Consultation, collaboration, agenda settings etc.
Linking	What do you think should be the role of fisher organizations within marine governance?	<ul style="list-style-type: none"> - Consultation, collaboration, agenda settings etc.

Marine governance, Linking, bridging social capital	Looking at the development of the pilot Marine Spatial Plan for the Pentland Firth and Orkney Waters, what has been the role of your organization in developing this plan? Please describe as detailed as possible.	<ul style="list-style-type: none"> - In what ways was this organization involved? - At what stage(s) of the development of the plan were you involved? - What activities has your organization engaged in as part of the development of the plan? (meetings, research, consultations etc.) - With what other stakeholders did you primarily interact? <ul style="list-style-type: none"> o Governmental level o Other fisher/ civil society organizations o Other market parties
	Could you describe in your own words what the pilot Marine Spatial Plan for the Pentland Firth and Orkney Waters entails?	<ul style="list-style-type: none"> - What does the pilot MSP for the PFOW mean for inshore fishermen in Orkney?
Interests	In developing the pilot plan, what were the main interests this organization promoted?	<ul style="list-style-type: none"> - Why these interests? - What other aspects of the plan were relevant of Orkney inshore shellfish fisheries?
Bonding, linking	Could you tell me more about the involvement of your members with the development of the pilot plan?	<ul style="list-style-type: none"> - How did you inform your members? - How did you consult members about their interests? - What were the primary responses of your members? (interest/ disinterest/ concern/ anxiety/ enthusiasm/ confusion/ rejection/ protest/ willingness to participate) - Were these responses and expressed interests in line with your expectations? - During the different stages of the development of the pilot plan, how would you describe the engagement of your members? (Well informed/ disinterested/ defensive/ collaborative/ etc.) - What actions did members undertake to get their voices heard?
Bridging	How would you describe your interactions with other <u>fisher organizations</u> during the development of the pilot plan?	<ul style="list-style-type: none"> - With what organizations specifically did you interact? - Whose initiative were these interactions? - Collaborative/ consultative/ competitive/ etc. - In what ways did these interactions contribute to your organization's objectives? - Looking back, what could have been improved in these interactions?
Bridging	How would you describe your interactions with other <u>marine stakeholders</u> during the development of the pilot plan?	<ul style="list-style-type: none"> - With what organizations specifically did you interact? - Whose initiative were these interactions? - Collaborative/ consultative/ competitive/ etc. - In what ways did these interactions contribute to your organization's objectives? - Looking back, what could have been improved in these interactions?

Linking	How would you describe your interactions with <u>governance actors</u> during the development of the pilot plan?	<ul style="list-style-type: none"> - With what actors specifically did you interact? - Whose initiative were these interactions? - Collaborative/ consultative/ competitive/ etc. - In what ways did these interactions contribute to your organization's objectives? - Looking back, what could have been improved in these interactions?
Marine governance	Did you feel there were stakeholders missing in the development of the pilot plan?	<ul style="list-style-type: none"> - If so, which ones and why? - In what ways should these stakeholders have been involved?
Marine governance	Looking back at the process of developing the pilot plan, what has surprised you? Please explain.	
Marine governance	<p>[If not yet discussed]</p> <p>Could you give an example of what went well in the development of the pilot plan?</p> <p>Could you give an example of what didn't go well, and how could this be improved in the future?</p>	<ul style="list-style-type: none"> - For instance focus on what the organization did; what were challenges/ strengths of <u>the organization</u> within the development of the pilot MSP? - Involvement of fishers? - Process/ structure/ communication....?
Interests	<p>[If not answered yet]</p> <p>Looking at the current pilot plan, do you feel the interests of your organization are well represented? Please elaborate?</p>	<ul style="list-style-type: none"> - Do you feel your organization has been able to influence the policy process? Please explain why yes/no - Are you (personally/ as an organization) satisfied with the results? Please explain - Have you received responses from your members on the pilot plan? If so, what are the general responses?
Marine governance	What are, for you as a representative of a fisheries organization, the main lessons learned?	

I have some final questions about the future of the inshore shellfish fisher community in Orkney.

Topics	Questions	Probes
Marine governance	Looking forwards, what do you think will be the main challenges regarding marine governance for the Orkney waters the coming 20 years?	<ul style="list-style-type: none"> - At what governance scale do you think these challenges should be addressed? (intergovernmental, national, regional, local government, local civil society organizations, community, individual, etc.)

		- What do you think is needed from the fisher community/ organizations/ marine governance to address these challenges?
Community resilience	Keeping in mind these challenges, what do you expect the fisher community will look like in 20 years?	
Community resilience	In what ways do you think fisher organizations like yours can influence the development of fisher communities?	- What, to you, is the biggest added value of a fisher organization for fisher communities?

IIC. MEMBERS PILOT PFWO MARINE SPATIAL PLAN WORKING GROUP

[Introduction of myself (me, studies, research); purpose of the interview (if needed explain relevant terms, such as ‘marine governance’); duration of interview; use of interview (recorded, transcribes, part of larger database, anonymous, if desired transcription can be reviewed by interviewee)]

Opening questions:

Topic	Question	Probes
	Could you first please tell me a little bit about yourself, and how you came to work for the Orkney Island Council/ Highland Council/ Marine Scotland/ PFWO pilot MSP working group?	<ul style="list-style-type: none"> - What area do you specialize in/ What is your professional background? - What is your connection to marine development? - For how long have you been involved in the Council/ Marine Scotland/ marine governance? - Have you had previous experiences regarding marine spatial planning?
	What have been your specific tasks in the development of the pilot MSP?	
Marine governance	Could you describe in your own words what MSP entails?	<ul style="list-style-type: none"> - What are the main objectives? - How does the pilot plan for the PFWO contribute to these objectives? - What area/stakeholders/sectors does it influence? - What are the practical implications?
Marine governance	Let’s go back to the start of this process; what inspired the development of this pilot plan?	<ul style="list-style-type: none"> - Political drivers? - Who initiated it?

Participation is an important aspect of ‘good governance’, and is also mentioned in the MSP as a core objective. I’d like to ask you some questions about the involvement of different stakeholders in different parts of the policy process. First of all, let’s look at participation in general.

Topic	Question	Probes
Participation	First of all, what comes to mind when you think about ‘participation’ in marine governance processes?	<ul style="list-style-type: none"> - What is your first association? - Participation of whom? - In what aspects of policy-making? - What would that practically look like? - What could it contribute? - What could be disadvantages?
	What can be done by policy-makers to ensure/ facilitate participation in marine governance? What can be done by non-governmental actors to ensure/ facilitate participation in marine governance?	

Now let’s talk about the participatory process of the pilot marine spatial plan for the Pentland Firth and Orkney Waters.

Topics	Question	Probes
Participation Input legitimacy Interests	In what ways has the participatory process been enabled from the onset?	<ul style="list-style-type: none"> - How were key stakeholders identified? - How were key stakeholders approached for participation? - How did key stakeholders initially respond to objectives of the plan and their role as participants? - What interests were identified for the key stakeholders? - How have these key interests been identified?
Participation	Could you describe in what ways stakeholders were included in the development of the MSP?	<ul style="list-style-type: none"> - At what stages of the plan development were key stakeholders included? - How were stakeholders stimulated to participate? - In what ways were the inputs of different stakeholders incorporated in the process? - In what ways were different types of knowledge incorporated in the process? - What mechanisms were in place to avoid conflict/ stimulate cooperation/collaboration/coordination/integration/negotiation?
Throughput legitimacy Participation	Looking back at the involvement of key stakeholders, what surprised you?	<ul style="list-style-type: none"> - Were there differences/similarities between the ways in which different stakeholders engaged the policy process? - What were the key challenges identified in the participatory process? (For instance; knowledge gaps, organizational, disinterest, conflict, etc.)

	<ul style="list-style-type: none"> - What did you, as a policy maker, learn from participating stakeholders? - How would you describe the <i>collaboration</i> between different stakeholders?
[If not yet answered] Looking back, how have you experienced the participatory process?	<ul style="list-style-type: none"> - Can you think of stakeholders who have not been included, but could have been a valuable contribution? (how come they were not included) - What were point of improvement for the process? - What went well?

Now I'd like to talk more specifically about the participation of the fisher community in the development of the pilot spatial plan.

Topic	Question	Probes
Linking	Have you personally interacted with fishermen or fisher organizations as part of the participatory policy process? Please describe your experience	<ul style="list-style-type: none"> - With whom did you primarily have contact? - In what settings/ via what media? - How did you experience these interactions? <ul style="list-style-type: none"> o What were the biggest challenges? o How did you cope with these challenges? o What went well?
Interests	What would you describe were the main interests of the fisher community regarding the pilot MSP?	<ul style="list-style-type: none"> - What were the interests voiced by involved representatives? - How would you describe the responses of the fisher community to the pilot MSP? - Was there a general opinion or was there diversity in interests expressed? - In what ways were these interests expressed? (By whom, what media, etc.)
Interests	Have, in your experience, the interests of the fisher community changed as the pilot plan developed over time? Please explain	<ul style="list-style-type: none"> - How were these changing interests expressed? - How has this influenced the policy process?
Participation	Looking at the fisher community as a whole, how would you describe the involvement of the community with the development of the pilot plan?	<ul style="list-style-type: none"> - General interest for the process - attendance of community members at meetings (compared to other stakeholders) - Well informed? - Own initiative? Please describe
Interests	Looking at the final pilot plan, in what ways have the interests of the fisher community been integrated in the plan?	<ul style="list-style-type: none"> - In what ways has the council ensure protection of fisher interests? - On what topics have concessions been made, why and how?
Feedback legitimacy	What have been the general responses from the fisher community regarding the final pilot plan?	<ul style="list-style-type: none"> - Have these responses surprised you? - What will be done with feedback on the final pilot plan?

To finalize our interview, I'd like to ask you a few more questions about marine governance in Orkney

Topic	Question	Probe
	First of all, looking at the coming 20 years, what do you expect to be the primary challenges for marine governance in Orkney?	
	Do you see a role for MSP in tackling these challenges?	- What would you describe is the strength of MSP as a tool for marine governance?
	What are your expectations for future marine spatial planning in Orkney?	- What do expect will develop from this pilot plan?
	What would you describe as the main outcome of the pilot process?	- What have been the biggest lessons learned from developing this pilot plan? - How will these lessons learned influence future marine spatial planning?

III. CODING TABLE

SOCIAL CAPITAL - BONDING (SB)

SB – VALUES

SB – VALUES – SKILLS

SB – VALUES – KNOWLEDGE

SB – VALUES – FLEXIBILITY

SB – VALUES – AUTONOMY

SB – BOUNDARIES

SB – SOCIALIZATION

SB – SOCIALIZATION – NEW ENTRY

SB – PRACTISES

SB – PRACTISES – TRADITIONS

SOCIAL CAPITAL - BRIDGING (SBr)

SBr – SCIENCE

SBr – SCIENCE – MSP

SBr – SCIENCE – FISHERIES IMPROVEMENT

SBr – SCIENCE – CERTIFICATION

SBr – MARKETS

SBr – MARKETS – CERTIFICATION

SOCIAL CAPITAL – LINKING (SL)

SL – FISHER ORGANIZATION (FO)

SL – FO – OFA

SL – FO – OFS

SL – FO – OSF

SL – FO – SFF

SL – PARTICIPATION

SL – PARTICIPATION – POWER

SL – PARTICIPATION – CONSULTATION

SL – PARTICIPATION – INFORMING

SL – PARTICIPATION – ENGAGEMENT

SL – TRUST

SL – TRUST – FO (SFF/OFS/OSF/OFA)

SL – TRUST – STATE (OIC/MS/CE/WG/HC/OTHERS)

RESILIENCE (RS)

RS – CHANGE

RS – CHANGE – UNCERTAINTY

RS – CHANGE – RISK

RS – CHANGE – COPING

RS – SUSTAINABILITY

RS – ASSETS

RS – ASSETS – HUMAN (AH)

RS – ASSETS – FINANCIAL (AF)
RS – ASSETS – POLITICAL (AP)
RS – ASSETS – NATURAL (AN)
RS – ASSETS – PRODUCED (AP)
RS – ASSETS – CULTURAL (AC)
RS – COLLABORATION
RS – CONFLICT
MARINE SPATIAL PLANNING (MSP)
MSP – USER-USER CONFLICT (UU)
MSP – UU – MARINE RENEWABLES
MSP – UU – AQUACULTURE
MSP – UU – OTHER
MSP – SPATIALITY
MSP – SPATIALITY – MAPS
MSP – STATE
MSP – STATE – ORKNEY ISLAND COUNCIL (OIC)
MSP – STATE – HIGHLAND COUNCIL (HC)
MSP – STATE – MARINE SCOTLAND (MS)
MSP – STATE – CROWN ESTATE (CE)
MSP – STATE – PILOT PFOW WORKING GROUP (WG)
MSP – PROCESS
MSP – PROCESS – BUREAUCRACY
MSP – PROCESS – COMPLEXITY
COMMUNITY INTERESTS (CI)
CI – POWER
CI – POWER – POLITICAL
CI – POWER – ECONOMIC
CI – POWER – SOCIAL
CI – SPATIALITY
CI – SUSTAINABILITY