Assessing participation of commercial fishers and recreational anglers in fisheries science and management in England

A report prepared for DEFRA

BY THE COUNTRYSIDE AND COMMUNITY RESEARCH INSTITUTE

Assessing participation of commercial fishers and recreational anglers in fisheries science and management in England

Start Date
13 February 2019

Finish Date
12 August 2019

Duration
6 months

Project Manager
Dr Mathew Reed

Research Team
Dr Jasmine Black, Dr Hannah Chiswell, Prof Paul Courtney, Richard Freeman, Nick Lewis, Prof Jeremy Phillipson, Dr Julie Urquhart Imogen Young

Date of Report
5 February 2020

Contents

Figures

Executive Summary

5 minutes to read

We want to thank the over 600 people who engaged with this research project, providing us with valuable insights into the experiences and opinions of fishers, anglers and other stakeholders. The data in this report was collected across England between April-July 2019, with 529 sea anglers taking part in an on-line survey. Sixty people, fishers, anglers, and stakeholders were formally interviewed, some in person and some on the phone, with more providing assistance and information. Without their participation and goodwill, this project would not have been possible.

The research set out to **understand individual experiences of participation** in fisheries management and science across England, with a specific focus on ten questions, which we have used to structure this report. Calls for greater involvement of individuals featured in the government's '25 Year Environment Plan'[1] in relation to United Nations sustainable development goals (SDGs) 12 and 14[2], as well as the "social and cultural well-being" of coastal communities. The 'Fisheries White Paper'[3] sets out an ambition to include a range of stakeholders in management decisions, specifically stating an aim to integrate anglers and to involve fishers in data collection.

Participatory science and management – *to what extent do individual fishers and anglers, perceive fisheries science and management to be participatory.*

Those who took part in this research had different perceptions as to the extent that fisheries science and management are participatory, primarily based on their situation. Those who were national stakeholders tended to think that it was not sufficiently participatory, but the situation was improving. Those fishers interviewed at the harbourside, who were mostly 'under 10m', inshore operators, believed that it **was participatory in theory but were not satisfied** with the form and extent of those opportunities in practice. The vast majority (80% plus) of **anglers reported that they had not had the chance to participate** in either management or science.

Participatory initiatives - *to what extent participatory initiatives by bodies such as IFCAs (Inshore Fisheries Conservation Authorities), ACs (Advisory Councils), coastal sea partnerships and industry-led research have been perceived as such by individual fishers and anglers.*

There are **fluid boundaries between organisations, roles and groups** included in the research. Five of our interviewees from the harbourside interviews had experience of representing fishing at a national level, for a range of organisations. They **were disenchanted with the process**, often reporting incidents when their contributions were either disregarded or ended in dispute. **Most anglers have no experience of participating in these bodies**, so do not perceive them to be so, or at times be aware that they aim to be inclusive. **National level representatives of fishing have the most positive view** of any of the groups, arguing that the opportunities for participation are increasing for fishers, and that they are responding to those opportunities. This is tempered by these opportunities being too limited and often poorly structured.

Experience of partnership working -*To understand and assess the awareness, degree and form of partnership working experienced by individual fishers and anglers, and their representatives.*

For many fishers and anglers, the **experience of working with others has been limited**, and at times, frustrating. For harbourside interviewees, there was a reflection **that partnerships required more significant listening**, and they were frustrated that this does not seem to happen, for example engagement with policy reports is not acknowledged, to the extent that fishers are unaware when, or if, reports are published. Anglers often have no role, or when they do the opportunity it is not publicised, and so they find it hard to engage. **Investment in relationships is not rewarded, creating a low trust environment.** The social capital necessary to build participation, and to provide the opportunity for sharing has not been nurtured and is often damaged by the structures in place.

[1] https://www.gov.uk/government/publications/25-year-environment-plan
[2] https://www.un.org/sustainabledevelopment/sustainable-development-goals/
[3] https://consult.defra.gov.uk/marine/sustainable-fisheries-for-future-generations/

The level of participation desired - *To understand the level of participation desired by fishers and anglers, and if this relates to particular processes.*

The majority of both fishers and anglers expressed a strong desire to have a more significant opportunity to participate in fisheries management and science. As discussed above, few anglers have had the chance to take part, but they report keen interest in doing so. Most of those who do not want to take part, fishers and anglers, hold this opinion because they view participation as futile. Our analysis shows that **anglers who want to engage are more likely to be members of angling clubs** and to be well equipped with the knowledge and social capital to do so.

The form of participation - *To understand the form of participation desired by individual fishers and anglers.*

Those with whom we conducted interviews at the harbourside, were likely (78%) to be a member of some form of angling or fishing group or association. Two-thirds of those interviewed thought these groups represented the interviewee's perspective 'reasonably' or better. In some instances, the group in question was of a social nature (1/10), such as angling club, rather than representative. Even when they are not members of national organisations, fishers were often aware of particular people working for, or associated with, those groups. **Membership was not seen as effective**, because the difficulties of dealing with 'the government' were viewed to be too problematic. The most dedicated and experienced anglers, who are most keen to take part, are those who are members of a club (29.3%).

Barriers to participation - *To establish the perceived barriers to effective participation in the opinion of individual fishers and anglers, and their representatives.*

Barriers of culture and trust are often implicit and require skilful navigation. **Cultural differences are a considerable, but largely unobserved, barrier to participation**. Fishing and angling are long term, personal, risk-taking, oral cultures that foreground competence quite distinct from that of policy making. The dominant tone of interviewees was that of frustration, of being misunderstood by people who are physically and socially distant. Because of the low levels of trust, frustration is often paired with suspicion.

Success factors - *To understand the vital success factors to partnership working in the view of fishers, anglers and their representatives.*

Fishers, as small business operators argue that their capacity to engage with the policy process is limited. Often events are held at venues distant from the harbours they work from, or at times that clash with their business activities. **Many of those working policy over-estimate how important national policy is for these small, local businesses**. Supply chain issues or changes in the harbour are more pressing for the viability of the fisher's enterprise but receive less focused policy attention. **Fishers take a more positive view of fisheries science**, but a considerable cultural distance remains in understanding and the experience of the marine environment.

Patterns of participation - *To identify and understand if there are any systematic patterns such as geographic associated with participation, or the desire for changes in participation.*

Most commonly **fishers and anglers suggest they could contribute to science and management through their knowledge**. Most of the national level interviewees shared this view, arguing that fishing boats could be "floating laboratories". Vessels could be part of a network for crowdsourcing data about fish but also the wider marine environment. Fishers were especially aware of their lack of formal education however, along with anglers, they do feel that they hold considerable expertise.

Where participation can be most impactful - *To identify where and how in fisheries science and management processes fishers and anglers can contribute through their participation to greatest effect*.

For the final question, of how fishers and anglers could contribute to the greatest effect, we have taken up a more analytical position. We reflect on the limitations of the situation and interpret what we have heard through the lens of social science. **Fishing remains an oral culture**, with a premium on personal and local contacts, which provides a frame as to how integration could be more effective. **Local agreements are highly prized** by fishers and anglers who tend to be geographically focused on their local areas. **Greater reciprocity is necessary** to help build the social capital and trust that is presently missing. **Recognising their expertise** and binding them into projects would offer considerable opportunities for all involved with the management and understanding of marine ecosystems.

A repeated motif in the specification for this project was how fishers and anglers have been 'heard, considered and integrated'. We have not been able to address some points in that objective as we have not observed sufficient integration. Our research presents evidence of a strong desire for **participation on the grounds of shared interest and expertise by fishers as well as anglers**. The overwhelming majority of anglers, and most fishers have had very few opportunities to participate to date. The national stakeholders were able to point to participatory schemes and projects, that were leading in the right direction but were insufficient. Our harbourside interviewees, both fishers and anglers, had a different perspective. **The participatory structures they encounter are not operating in ways that they feel appreciates their needs or potential. In a social environment characterised by low levels of trust, fishers are not investing in the relationships needed to realise or foster participation, and anglers are not being given the opportunity to make an investment.** Considerable capacity and opportunities exist to work more closely, and to build strong relationships which will sustain our shared marine environment.
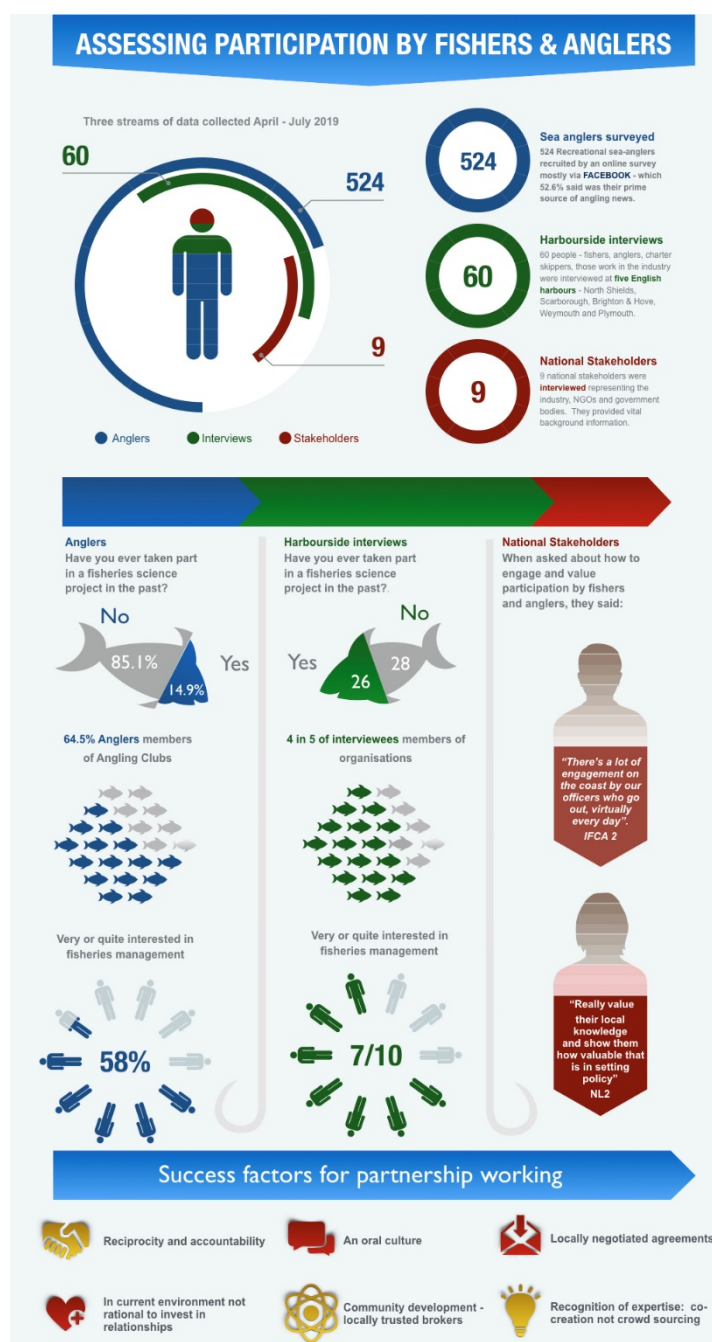
Introduction and Aims

The governance of fisheries is at the core of a spectrum of policies ranging from sustainable tourism through to net zero carbon food systems, and these require a balance between environmental, economic and social objectives. New policies should typically address the needs of all the stakeholders who share the marine ecosystems; either for business or recreation. It is essential to understand that the fishing industry is both complex and diverse — there are sub-groups who are hard to reach or engage in policy consultation or scientific research. Recreational sea angling has generally been characterised by a low level of regulation and organisation, with the techniques used as varied as the littoral habitats with which the anglers engage. Although commercial fishers (here on 'fishers') and anglers are involved and share a stake in a public resource, the diversity of needs perceptions, aspirations and knowledge, means that the capacity to engage may vary considerably. It is also evident that some of the methods and techniques to foster engagement have not been adequate. In this report we identify, describe and discuss the needs and aspirations of these stakeholders.

This project has **ten interlinked aims**:

A. **Participatory science and management** - Assess the extent to which individual fishers and anglers, and those who represent them, perceive fisheries science and management to be participatory.
B. **Participatory initiatives** - Assess to what extent participatory initiatives by bodies such as IFCAs, ACs, coastal sea partnerships and industry-led research have been perceived as such by individual fishers and anglers, and their representatives.
C. **Experience of partnership working** -To understand and assess the awareness, degree and form of partnership working experienced by individual fishers and anglers, and their representatives.
D. **The level of participation desired** - To understand whether a greater, lesser, or static level of participation is desired by fishers and anglers, and their representatives, and if this relates to particular processes.
E. **The form of participation** - To understand whether the form of participation desired by individual fishers and anglers, and their representatives is between groups, through formal representation or via individual formats.
F. **Capacity to facilitate participation** - To assess perceptions as to the capacity of the organisations representing anglers and fishers have to facilitate the desired forms of participation in fisheries management and science.
G. **Barriers to participation** - To establish the perceived barriers to effective participation in the opinion of individual fishers and anglers, and their representatives.
H. **Success factors** - To understand the vital success factors to partnership working in the view of fishers, anglers and their representatives.
I. **Patterns of participation** - To identify and understand if there are any systematic patterns such as geographic, position in the industry or recreational sector associated with participation, or desire for changes in participation.
J. **Where participation can be most impactful** - To identify where and how in fisheries science and management processes fishers and anglers can contribute through their participation to greatest effect.

The scope of the project centres on the past, present and desired future participation of commercial fishers and recreational sea anglers in English fisheries management, although EU and UK wide experiences were necessarily relevant. The primary focus of the research has been on *individual responses,* with institutional being a secondary focus. This perspective helped to guide the selection of interviewees and in turn the form of the research conducted. This report starts with the findings and provides a section at the end which covers the theory and policy context in greater detail, as well as themes we have noted but have not taken up in detail.

Methods

Three streams of data were collected for this project between April – July 2019. This section provides an overview, with more detail in Appendix 1.

The first stream was **nine national interviews** with those who had insights into the how participation in marine policy and science are undertaken - government bodies, trade bodies, conservation bodies and NGOs. They were recruited through the knowledge of the team about the fishing industry, and where necessary Defra made the introductions. These interviews provided institutional, industrial and policy insights for the research.

The second stream was **interviews at the harbourside** with fifty-four fishers, anglers, charter skippers and other stakeholders (see Table 4 below). The research team collected data about commercial landings of fish, angling activity and vessels registered in the harbour. The project steering committee selected the five harbours from a long list to reflect geographical, industry and social diversity.   Interviewees were contacted at the harbourside and interviewed using a semi-structured interview schedule, with the field researchers analysing the transcripts of the resulting interviews.

Location		Fishers	Anglers	Charter Skipper	Others
Brighton		7	7	0	1
North Shields		7	3	2	0
Plymouth		1	4	0	3
Scarborough		3	6	0	0
Weymouth		5	1	2	2

Table 1 - Interviewee types and numbers per location

These interviews provided the research team with a rich stream of detailed evidence that spoke about realities in particular places and the experiences of those who are part of those communities.

The third stream was an **online survey of recreational sea anglers**. An online survey was chosen to allow as many anglers as possible to participate, regardless of institutional affiliation or location in the England.   It was promoted through online angling forums, as well as Facebook groups and Twitter, it recruited 529 people to complete the questionnaire. Such an approach of 'self-selection' is more likely to attract those already engaged with their sport, than the occasional or holiday angler. This stream of data provided important, large scale data about sea anglers throughout England (see Figure 1). Most of this data is reported as numbers but there were longer written responses also provided. It was analysed by the research team using a range of statistical tools.

Figure 1 - Map of responses to the Sea Angler survey by postcode

All of the research data collected has been recorded, stored and analysed in accordance with the University of Gloucestershire's ethical guidelines. We have given anonymity to all of the data presented in order to allow people to speak freely and advised every participant of the way in which we would deal with this data. In a similar way we only name government organisations, but not industrial or civic organisations.

This project faced several limitations that qualify the findings. Some of these we anticipated, but they are important when considering our work. The first is that the funder determined the research questions which reflect the current policy context rather than being driven directly by the communities studied or the research team. Second, reflecting the first limitation, the time frame for data collection and analysis was between April and July 2019.   This lack of time compressed the data analysis period, we anticipated this and used only experienced researchers, with a background in interviewing or fishing studies, or both. Both the qualitative and quantitative data will be subject to more thorough analysis for inclusion in peer-reviewed papers that will follow this report. Third, is that given the short time frame recruitment of participants may have tilted towards those already willing and able to take part.   The team were very aware of this challenge (see Urquhart 2019) and worked to be inclusive, but the time frame limited our efforts.   Readers will note that the report includes no recommendations or specific findings at the behest of Defra.

Understanding participation

Engaging people with science is an area with a complex landscape of competing and conflicting ideas. Citizen science has been a popular idea, as a way of training non-scientists to collect and sometimes interpret data. Proponents of this approach point to the benefits being that people engaged in a process are more likely to trust its results. It also offers opportunities to collect a higher volume of data, often at a lower cost. Critics of the approach tend to be social scientists who note that citizen science often overlooks the expertise of non-scientists, and leaves much of the power to define problems with the scientists. Social scientists researching environmental monitoring, public health and rural development have suggested way of working in partnership that leads to the co-creation of knowledge.   These approaches distribute power more equally in the process of deciding what questions to ask and how best to answer them, which means that solutions are often rooted in lived experiences but produce useful and timely solutions. We understand that these opportunities will be influenced by the

structure of skills and connections that individuals have, which we understand as social capital and which we discuss later in the report – see Box 1.

In this specific context, the UK government has consulted the fishing industry and stakeholders about the future of fisheries based on the concept of partnership working:

> "Our future vision is that industry should take a greater, shared responsibility for sustainably managing fisheries, while making a greater contribution towards the costs. This can include, for example, work to develop new management practices and contributing to fisheries science, being part of the delegation in the negotiations, being more actively engaged in fisheries management decisions and co-designing future policy" (Defra – Fisheries White Paper[4]).

This concept includes a range of options - 'participation', 'engagement' and 'co-design'. Such scope means it is particularly important to gauge how those in the industry and on the harbourside understand their options and experiences.

Understanding 'participation' at the edge of the water

For this project we have brought together three distinct streams of evidence and here we present the findings in parallel in order to show the commonalities, as well as the differences.   Our purpose is not to imply that there can be any assumption of unity between fishers and anglers, or indeed within those groups; it is equally important not to assume antagonism. Anglers and fishers typically share a fascination and admiration for fish and the sea as a common starting point, and both groups have a stake in policies and management relating to this shared interest. We have tried to present a diversity of voices by using direct quotes whenever possible, whilst respecting confidentiality. Often because of the small numbers of people engaged it is not possible to share examples as this would readily identify people.

In the interests of brevity and expediency in producing them, we have structured the findings according to the ten principal aims of the study. Each question is structured so that the evidence of fishers is first, followed by that of anglers and national stakeholders last. Inevitably, no hard boundaries exist between them, as we seek to portray in the concluding sections of this report.

A - Participatory science and management

> *Assess the extent to which individual fishers and anglers, and those who represent them, perceive fisheries science and management to be participatory.*

Those who took part in this research had different perceptions as to the extent that fisheries science and management are participatory, largely based on their situation. Those who were national stakeholders tended to think that it was not sufficiently participatory, although the situation was perceived to be improving. Those fishers interviewed in the harbours thought that it was participatory but were not particularly satisfied with the form and extent of available opportunities. The large majority of anglers reported that they had not had the opportunity to participate.

Of the people we interviewed at the harbourside, about half had previously taken part in a marine science project (see figure 1) and were generally positive about their experiences of doing so.

---

[4] https://consult.defra.gov.uk/marine/sustainable-fisheries-for-future-generations/
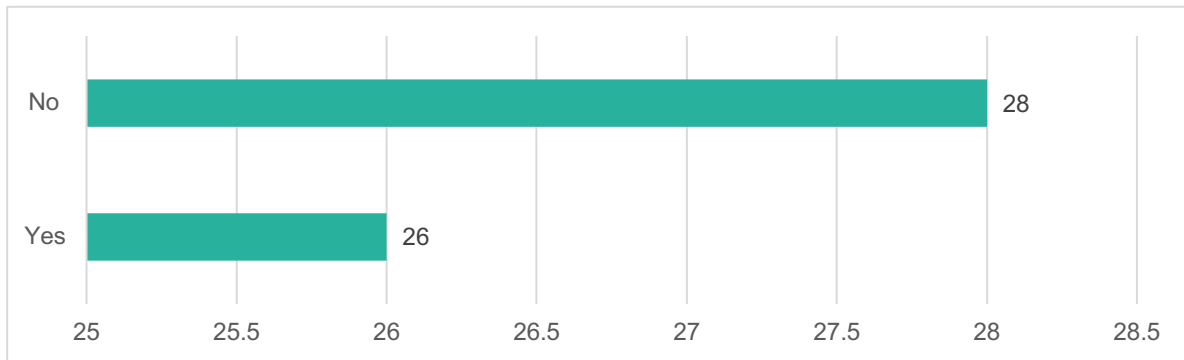
Figure 2 - Have you taken part in a fisheries science project in the past? (interviewees)

Their thoughts about the experience of taking part in fisheries management were more nuanced, and often expressed with considerable energy. If we take the example of **a trio of fishers** in the north east, they capture the general experience and tone of our interviewees. Fisher 3 felt that the opportunities were unbalanced with the scientists trumping the voice of the fishers, who often were not consulted:

> *"I don't think there is any balance, it's just what the scientists come up with, the MMO [Marine Management Organisation] listen to them and make their decisions based around it […] little boats like us, no one asks our opinion anyway." Fisher 3 NE*

Fisher 1 observed that the forms of participation did not seem to be inclusive of him or his peers, although he noted that there were reports of including people:

> *"I don't think they listen to fishermen enough. They don't involve them, experienced fishermen, they do not involve them enough. I know people have said there has been a survey of this, that and the other. No one has asked me, and I know virtually every fisherman on this coast, and they haven't been asked, so where has this come from then? This is sort of thing that goes on […] it's unbelievable." Fisher 1 NE*

Fisher 5 had engaged in the process more deeply, and for him the process had a flaw in that many fishers were not included until it became a public consultation and then the voices of fishers were overtaken by the volume of others, in particular conservation groups. Here he draws a distinction between the institutional stakeholders and the rest of the industry:

> *"It's a win-win because, at the end of the day, it's still in their remit to totally ignore you regardless of what you come up with, but I think public consultation... The normal route they take with anything is they do an industry consultation, but they generally consult with the NFFO, SFF, IFCAs... I know IFCAs aren't industry and they would come under the NGO umbrella, but they do it in the same tranche of consultation. They don't generally get a broad spectrum of input from the industry until they go to public consultation, and then it's just swamped and lost." Fisher 5 NE*

The 'win' he refers to is that a consultation has been held, and the formalities of participation have been observed, but many people have been left without an adequate voice or feeling that they have been adequately heard.

Most **anglers report** that they have never been asked about, or engaged with, either marine management or marine science. A large majority had not been asked about management by local bodies (82.5%) (Figure 2), and even fewer had taken part in a marine science project (14.9%) (Figure 3).
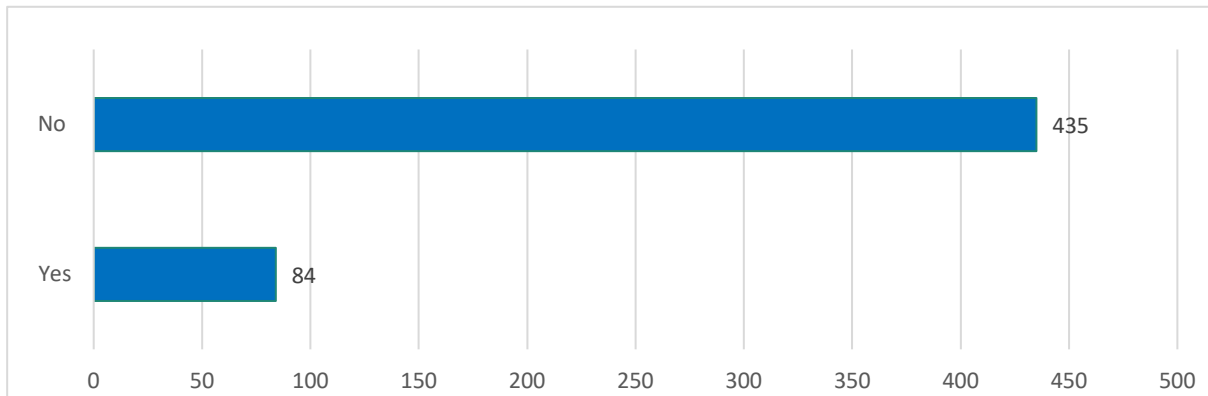
Figure 3- Have you ever been asked for your opinions by management bodies - such as CEFAS (Centre for Environment, Fisheries and Aquaculture) or your local IFCA - about how fisheries are managed? (Anglers)
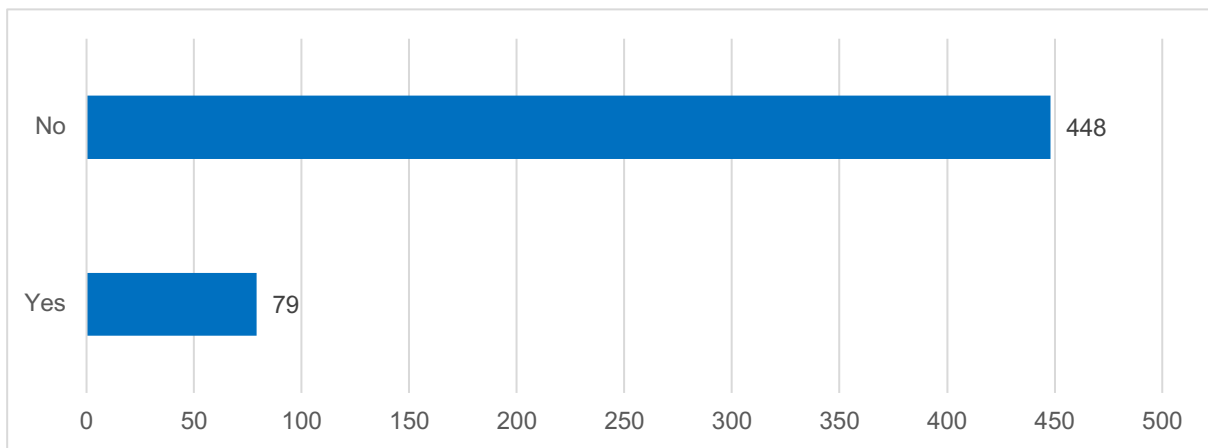
Figure 4 - Have you taken part in a marine science project in the past? (Anglers)

For most anglers, fisheries management and science is not participatory as they have not had the opportunity. Consequently, their knowledge and awareness of the topic can be limited. This situation was summarised by a charter skipper:

> *"Anglers generally look at scientists as toffs that don't know anything about angling. So, they're not interested in talking to each other. When actually, the truth of the matter is, there have been a number of very successful integrations between the science community and the angling community". Charter Skipper 1 Plymouth*

As this interviewee suggests, for anglers these are questions that are fraught with problems of awareness and misunderstanding. Given the low levels of engagement reported by anglers this is not surprising.

B – Participatory initiatives

> *Assess to what extent participatory initiatives by bodies such as IFCAs, ACs, coastal sea partnerships & industry-led research have been perceived as such by individual fishers and anglers, & their representatives.*

Five of our interviewees from the **harbourside fisher interviews** had experience of representing fishing at a national level, for a range of national organisations and in one case for several decades.   They were not

professional representatives but rather those who had taken the time to represent themselves and their peers at national levels. **This group were dis-enchanted with the process, often finding that there were moments when their contributions were either disregarded or ended in dispute**. Examples include a sustained contribution to a national report sponsored by Defra (Department for Environment, Farming and Rural Affairs) which was discontinued, with the participant not being informed of the results or whether the report was used or published. Another fisher felt that he had been subjected to exemplary prosecution by the MMO after an infringement because of his work with an IFCA. These incidents coloured the career and disposition of these fishers.

Perception of the role of IFCAs, the MMO, CEFAS, Defra and Seafish[5] as well as other bodies varied widely. In most of the case study sites IFCAs were not well regarded, reflecting in part local relations with staff but also the institutional positions taken. These patterns were not uniform, as in the north east the IFCA was well regarded, and in Brighton and Hove the MMO was viewed positively, in part reflecting the time that had been taken to build relationships:

> *"…with the MMO you can phone them and put your point of view across and they will try and listen… or come and see you… talk to you like you're a human… with the IFCAs… you just feel that it's people trying to create a job…" Fisher 4 B&H*

The failure for some interviewees was that they perceive the rules are not consistently enforced:

> *"I'm not calling the MMO, as they have a job to do. But they enforce it [management] strictly when the other European countries don't, and that's a big problem." Fisher 4 NE*

For another fisher the problem lay closer to home but distant from the waters they worked:

> *"Well I think they [IFCA/MMO] represent who is charge of them first, I think they're dictated to by people higher up, it comes from central government, and they have to do what they are told." Fisher 1 NE*

Both these reflections suggest that these initiatives are not viewed as participatory but rather as mechanisms for enforcement from outside. A fisher in Plymouth had a more analytical take on the problem of the various institutions, but again they were distant from him:

> *"I know about each of the bodies. I know what their boundaries or responsibilities are. MMO and Defra seem to be somewhat disjointed, they should be much more joined up. This allows one to blame the other for a failure". Fisher 1 Plymouth*

A charter skipper from Weymouth noted that often the IFCA did not really understand the rhythms of his **angling** business:

> *"What we do find is they [IFCA] want to always do something in the middle of the summer. If they want input from us the best time that they can get input from is when we've slowed down" Charter Skipper 1 Weymouth*

Whilst many of the harbourside interviewees could find problems and frictions with these bodies, as above, often not engaging or being wary of doing so, there were also examples of positive interaction:

> *"It's fundamental, the work that they do [IFCA], they have to be there to police everything […] and at the end of the day, I think they do a fantastic job, the IFCA and the likes of Defra."*

> *The [Sea Angling Club represent us] extremely well, our secretary is high up in IFCA and we know all the regulations, new regulations that come in we know straight away, when to enforce them, we're well informed like […] he's an amicable friend and we talk quite regular, and he puts the point across very good for anglers." Angler 3 NE*

Often the successes reported above represent **investment in creating personal contacts and networks** in an area, as well as the legacy of previous projects and initiatives. The sense that often these bodies responded to wider pressures rather than local concerns suggests that there may be limits to their local autonomy and the degree to which participation is seen to be effective.

> *"all our IFCA is bothered about is shellfish. They're only bothered about lobsters and crabs". Angler 1 Scarborough*

---

[5] A non-departmental public body that supports the seafood industry.

These observations point to the lack of uniformity in the experience of localized initiatives - such as FLAGs, IFCAs - reflecting not only the priorities of those communities but also the effectiveness of such bodies.

National level representatives of fishing have a more positive view of participation, and that it is developing well, from a low base. They also perceived that fishers in particular were increasingly prepared to invest energy into participation. Our interviews with IFCAs demonstrated that some conducted themselves in ways that fishers in particular value:

> *"we've held one-to-one consultation events, where we'll go and have days in each of the big ports up and down the district and meet one-to-one with people and have a chat about the state of the fisheries and what they'd like to see and the process to management thing". IFCA 1*

With an active process of seeking to engage local people:

> *"Also, there's a lot of engagement on the coast by our officers who go out, virtually every day, either at sea on one of our vessels that we've got throughout the district, or along the coastline, doing patrols of local harbours and the coastline generally, and meeting both recreational and commercial fishers and telling them about what we do and answering their queries, etc". IFCA 2*

One of our interviewees was very confident in the model that the IFCAs present:

> *"I think it's getting better. It's something we've got to continuously work on, and we are going to work on, meeting up with the industry and getting them to come to us. I say the industry, but recreationals as well. As I say, they can come to our meetings. They meet the officers along the coastline. We also have periodic public consultations, depending on different types of work we're doing". IFCA 2*

Our interviews tend to suggest that there is a perception gap between institutional stakeholders, and those we interviewed on the harbourside or anglers surveyed. **Those representing institutions tended to think that there are greater levels and opportunities to participate than those not involved in the policy process.**

C – Experience of partnership working

> *To understand and assess the awareness, degree and form of partnership working experienced by individual fishers and anglers, and their representatives.*

As noted above, for many groups, experience of working with others has been limited and at times frustrating. Questions of partnership working continued already established themes.   For **harbourside fisher interviewees** there was a reflection that partnerships required greater listening and they were frustrated that this does not seem to happen:

> *"Listen to us?, they've never listened to us for years and years [Government], and they still don't listen to us […] we've always just been a pawn in the game." Fisher 4 NE*

> *"you say it, and nothing seems to get done or all you get is, well, like …it's, "Alright, we've heard you. We'll tell you we'll do something," and nothing ever happens. It's the same old story year in year out. It's been going on for years and nothing. It just doesn't seem to change." Fisher 1 Scarborough*

One fisher observed that the problems of partnership working were partly how each side perceived the other, and that there were 'sides' at all:

> *"The problem is… […] I get that feeling, that rather than working together, the fishermen view IFCA and the MMO as the 'enemy', and that IFCA and the MMO view use fishermen as the 'villains' […] rather than both have their best interests at heart and pulling in one direction." Fisher 6 NE*

Many fishers in particular, were concerned that the science community was too influential and that the evidence they relied on was flawed:

> *"I think there should be less involvement from the science side because it's totally false information that's been put forward, that's my opinion. […] they should listen to the fishermen, come out with the fishermen, see the fishermen. What they do is totally wrong, it's not a true reflection." Fisher 4 NE*

That the partnership was not equal was a concern often repeated, with a perception that small or incomplete scientific projects would become the basis for wider policies:

> *"To a degree it works, but I think that it's so small [scientific efforts], it's a tiny proportion of what's going on and I don't think you get a good overall picture. […] to do something properly, it has to be done over a few years on a larger scale […] but the problem with that is, usually at the end of it is something detrimental to the fishermen. So, fishermen become very dubious about talking anybody to sea, because they think they're going to lose their livelihood […] so they tend to not want to get involved." Fisher 1 NE*

Most of those who had engaged with marine science found it rewarding and often appreciated the skills of the scientists. The research team heard sophisticated critiques of scientific methods from fishers and stakeholders, as well as understandings of its limitations, as well as their own when it came to ecological models and statistics. In partnership working their knowledge and experience is discounted whilst limited scientific projects are over-valued. We need to be careful not to see these comments as rejecting wanting partnership working but rather reflecting the limited success of many efforts to date.

As an angler in Weymouth comments, it is possible and necessary to form a consensus:

> *"It's just that everybody seems to be really pulling together more now that they understand exactly what's going on. If you don't know then you form different opinions, but if you do know and then you can come together on it, then you all form the same opinions." Angler 1 Weymouth*

As a charter skipper in Plymouth notes it is important to realise that there are competing and perhaps conflicting imperatives at play, as well as history to overcome:

> *"There are so many old historical, shall we say, disagreements, that you might be able to get them to do it, but you've got two things here; you've got the boats like us, which don't have numbers on, but you've also got boats who are angling boats with numbers on[6]. So straight away there is a friction there." Charter Skipper 1 Plymouth*

An angler in Plymouth could see a way through the tensions and competing interests, seeing potential with anglers in particular but some **general ideas about how partnership working could be effective**:

> *"Non-fishing boats can get involved. Anglers should be easier, [but] they have to overcome the perception that it will always be used to make a ban on something. There is massive scope for [more science], but it needs to be in easy format and overcome the lack of trust. So, an app would be perfect. There are variations amongst anglers… Competition data could be used you could work with local Angling clubs to get citizen science projects off the ground. Make it simple, clear what aims are and seen to get something out of it at the end". Angler 2 Plymouth*

D – The level of participation desired

> *To understand whether a greater, or less, or static level of participation is desired by fishers and anglers, and their representatives, and if this relates to particular processes.*

There was a uniform and strong desire amongst participants in the research to have a greater opportunity to participate in fisheries management and science. As discussed above, few anglers have had chance to take part, but they report a strong interest in doing so, and the detail of this is important to note.

Both anglers and interviewees were asked if they would be interested in participating in fisheries management across a five-point scale (see Figure 4) which reveals a strong interest in both groups – anglers (57.8%) and interviewees (71.2%). Those who were not interested saw little point in participation as their views would not be valued, and a common theme amongst the anglers who were not interested was they did not have sufficient knowledge to take part.

---

[6] Referring to the status of the boat, being registered as a commercial fishing vessel.
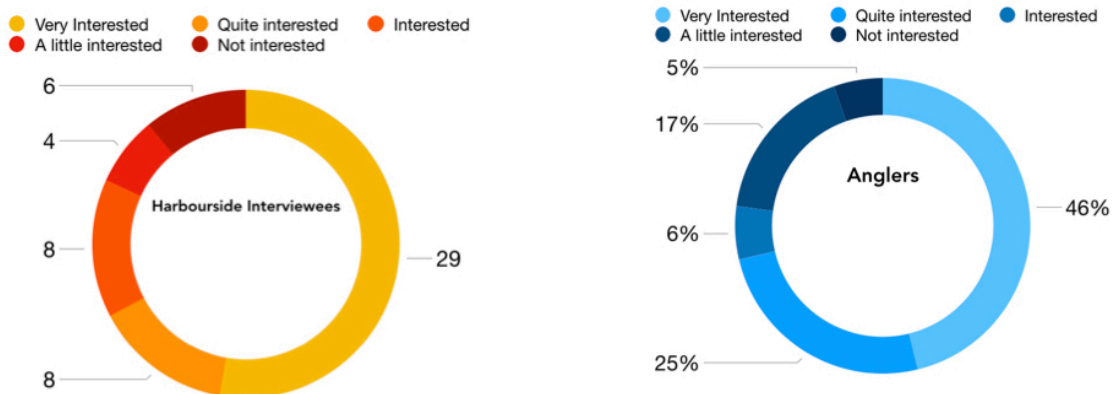
Figure 5 - How interested would you be if you were given the chance to have a say in fisheries management?

It is salient to recall that harbourside fisher interviewees, in particular, have had a greater opportunity to be engaged in fisheries management, and not withstanding some of their misgivings discussed above there is still a desire to be engaged.

Those fishers interviewed at the harbourside demonstrated a desire to engage and participate, in spite of strong earlier statements about the value of doing so, such as Fisher 4:

> *"Certainly… if it helps the overall industry, yeah you would [participate]". Fisher 4 B&H*

This simple statement that participation needs to be effective is at the core of much of the debate, and that such participation would comprise of a dialogue was central:

> *"If we were to be spoken to rather than dictated to is probably one of the main keys". Charter Skipper 1 Weymouth*

This was echoed by those who saw the importance of being listened to, as a key process in fostering participation and engagement:

> *"Yeah probably [there should be more participation], but there is a lack of, kind of, trust [...] fishermen tell the likes of the MMO, they're your management aren't they, we tell them things and don't seem to take it on board, what you tell them. […] there have been lots of meetings for this and that in the past, that fishermen have been invite to – for closing areas, for example, fishermen seem to give their opinions on why an area shouldn't be close, but it just falls on deaf ears." Fisher 2 NE*

The forms of participation sought need to comprise of a dialogue between those individuals who have knowledge of the topic. One angler recalled the embarrassment of realising that his MP did not understand the life cycle of a salmon when they were lobbying parliament. Participation needed to be based on a foundation of shared knowledge:

> *"There is a lot of misunderstanding and trust is the thing that is at the heart of the issue. Policy makers need to know more about fishing. The commercial side is very complex. Ex fishermen would be ideal, I know some good ones. Personal one to ones could help to build trust, like we are doing here." Angler 2 Plymouth*

Processes that fall within the cultures of those engaged in fishing and angling were important. One fisher noted the response of many of his peers through 'stonewalling' and not responding but how persistence can be rewarded:

"Well, yes, you can come to a consensus instead of….. if you just stonewall them and just blank them. Then, eventually, if you don't respond to consultations, however much I dislike them... If nobody responds to them, if nobody puts any viable feedback about the proposals forward, saying what impact they'll have or how they're not based on clear science or that there are some things that could alter either the scope of it or the depth... If you're willing to put those things forward, sometimes they will listen to them and think, "Well, yes." They can understand that there is room for manoeuvre. They're still going to get, basically, what they want, but, maybe, they don't have to be so heavy-handed with it." Fisher 5 NE

The importance of the room for manoeuvre, for discretion and dialogue was a repeated theme of our discussions. Often a major criticism of 'them' - those managing fisheries or science projects - was the tendency towards prescription rather than dialogue. In addition, an important theme is around the need for a local focus and personal autonomy:

"Quite interested as long as it was just the inshore area where we fish, I don't want any involvement in anybody else's area because I can't go telling people what to do with their own place." Fisher 3 NE

Anglers are interested in playing a greater role in marine management, which is apparent in Figure 6. Underscoring their interest out of the 529 responses, 364 (69%) provided extra comments about why they are interested, of which 357 were usable. Analysis of the additional comments from those who are interested reveals four main themes. The largest was that anglers are 'stakeholders' (n=213) **who argue that with their knowledge and interest they should be able to represent their sport**:

Because I feel the views of anglers are rarely taken into account when policy is formulated (last years 'Bass ban' a good example)

To have a say

It would be fantastic for anglers to be consulted on such things. Not enough is asked of anglers in my opinion

There was a shared perspective that management was not adequate and that anglers could contribute importantly to these debates. The second largest group (n=101) were those who argued that their **prime interest is 'conservation'**, protecting the marine environment, preserving fish, safeguarding their welfare and conserving the seas for the future:

To preserve fish stocks for the future.

Cause I am interested in conservation

I am a keep (sic) conservationist

The third group (n=24) were interested in 'learning' more about management and the environment:

I would be interested to see what goes on within the fisheries and what's involved in the managing of our waters.

The fourth group (n=19) are those who felt that they have a 'professional' interest and knowledge based on being ecologists, fisheries managers, former commercial fishermen and consultants who might be able to contribute in that capacity.

Box 1: An explanation of the types and forms of social capital.

Social Capital is a concept which connects ideas about sociability, social networks, trust, reciprocity and community engagement. It relates to **how deeply people are nested or embedded in relationships with other people** - their family, neighbours, associates and fellow citizens. Social capital is a form of resource; it enables people by giving them an identity and a pool of social opportunities. It also constrains people as the networks are not infinitely flexible, and requires skills when used. Robert Putnam notes that it "*features of social organisation such as networks, norms, and social trust that facilitate coordination and cooperation for mutual benefit'" (Putnam 1995: 67)*.

Norms and trust are shared, collective phenomena but can be difficult to define but tend to be noticeable when they are absent. As a social resource, social capital is value-neutral, criminals have shared trust, norms and networks as do law-abiding active citizens. A useful framework to help understand relationships through the lens of social capital is the distinction between Bonding, Bridging, and Linking social capitals.

Strong bonds characterise **bonding social capital** within groups or families. (homogenous individuals) and are horizontal ties between peers. The bonds between these peers will be more frequent, closer in affinity and identity. They are therefore seen as **strong ties**, low in information but high in re-assurance and support. In the present context, for example, bonding social capital refers to the relations between fishers.

Bridging social capital describes less strong, outward bonds between and across groups, friends or businesses (heterogeneous individuals), who are of approximately equal status. The relationships between people in these networks tend to be weaker, and less sustained but contributes advantage through new information and introductions to new networks. In this case, bridging social capital corresponds to the ties between fishers and anglers, or for example, between charter boat skippers and anglers, or fishers.

Linking social capital recognises the importance of positive connections between those with differing levels of power and social status, or those that cross hierarchies, so links between individuals of unequal status or power. Such relationships are essential for accessing support from formal institutions through personal contacts. Here we might conceptualise linking social capital at several levels: between fishers and national government agencies or public officials or between anglers and their representative bodies or associations.

E - The form of participation

> *To understand whether the form of participation desired by individual fishers and anglers, and their representatives is between groups, through formal representation or via individual formats.*

Very few people were members of national organisations, most of the focus of these groups was either local or sub-regional. Those with whom we conducted interviews with were more likely (42/56) to be a member of some form of fishing group or angling association. Two thirds of those interviewed thought these groups represented the interviewee's perspective 'reasonably' or better (see Figure 7). In some instances, the group in question was merely of a social nature (13%) rather than one that might act on behalf of the individual.
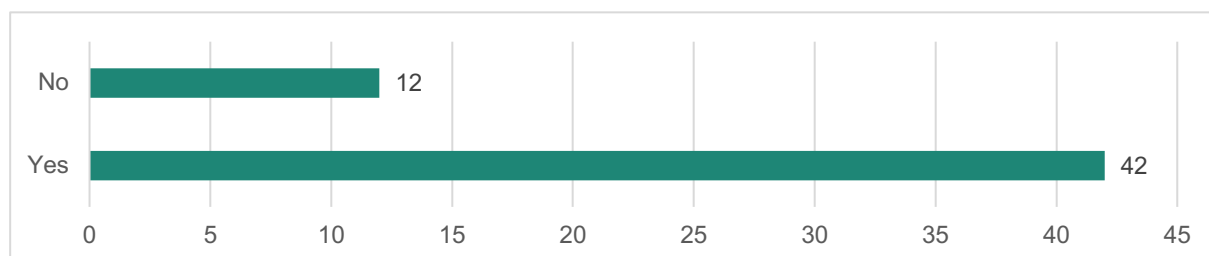

Figure 6 - Are you a member of any fishing/angling organisations/associations/groups? (interviewees)

Consequently, most harbourside interviewees thought that the groups and associations they are part of represent their views at least reasonably well (Figure 7).
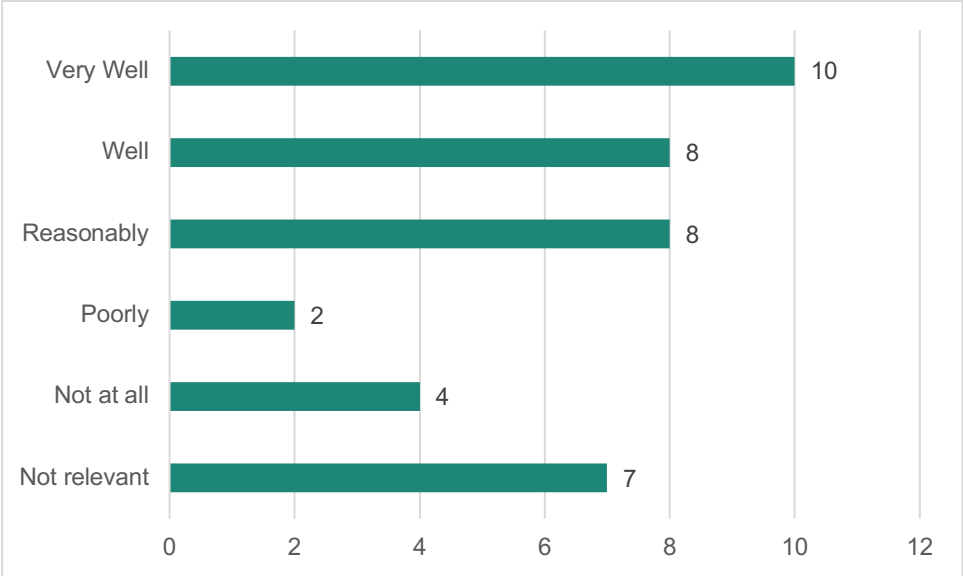
Figure 7 - Do you think they represent your perspective well? (interviewees)(n=39)

Only a minority of the **anglers are members of formal clubs** (29.1%) (see Figure 8) but a larger proportion take part in competitions (64.5%) (see Figure 9) and participate in affinity groups such as Facebook groups and on-line forums (see Figure 10) perhaps unsurprising given the survey method was based online.
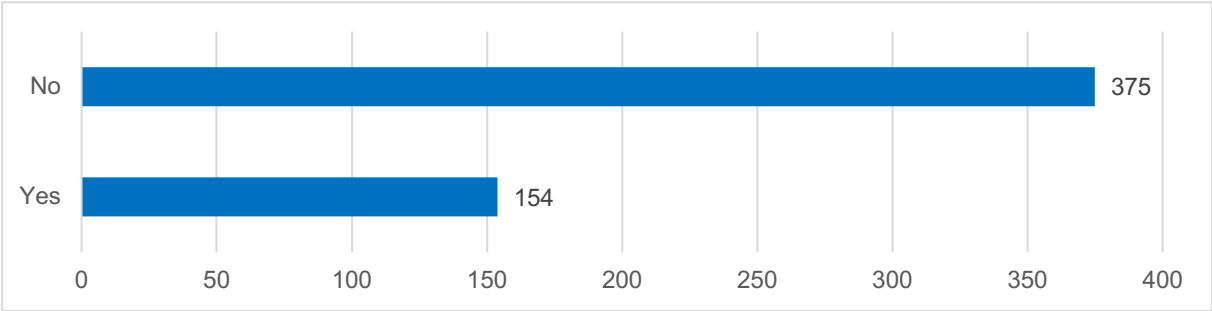

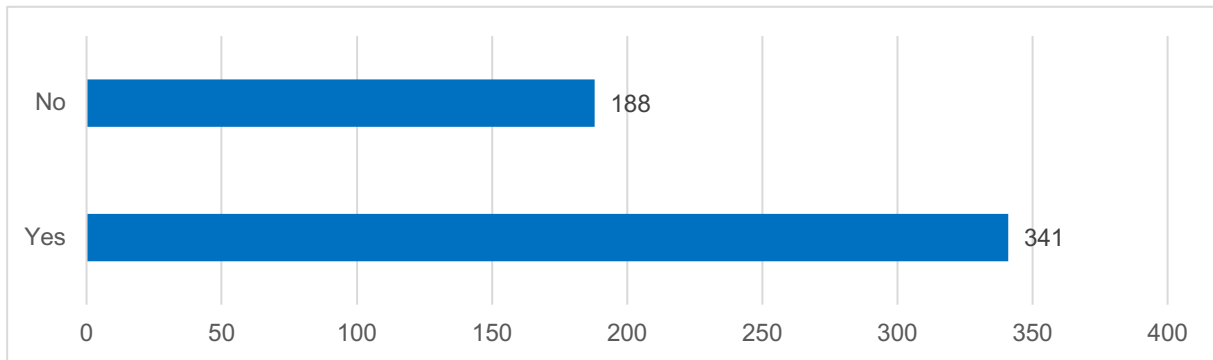*Figure 8 - Are you member of sea angling club? (Anglers)*

Figure 9 - Have you ever taken part in a sea angling competition?

If we consider these questions in relation to how anglers perceive their activities - as to whether angling is a question of 'identity' or a 'hobby' - then **we find that those who view it as part of an 'identity' are more likely to want to be engaged in fisheries management**.

Figure 10 - Where do you get most of your angling news? (Anglers)

By cross tabulating answers in the survey we are able to determine that those who identify strongly as anglers ('identity' anglers) are more focussed in their fishing strategies, consider themselves to be more knowledgeable, are more (self-reported) experienced, spend more money, fish more frequently, are more likely to have been asked for their opinions, are more interested in having a say in management (see Figure 11), are more likely to have participated in marine science and are more likely to be a member of an angling club. Associated with this last point, 'identity' anglers are more likely to fish with friends or a club, whereas 'hobby' anglers are more likely to fish by themselves or with family members. **Membership of an angling club, and a sense of angling being part of your identity are important factors in understanding the dynamics of the angling community and its members (see Figure 8).**
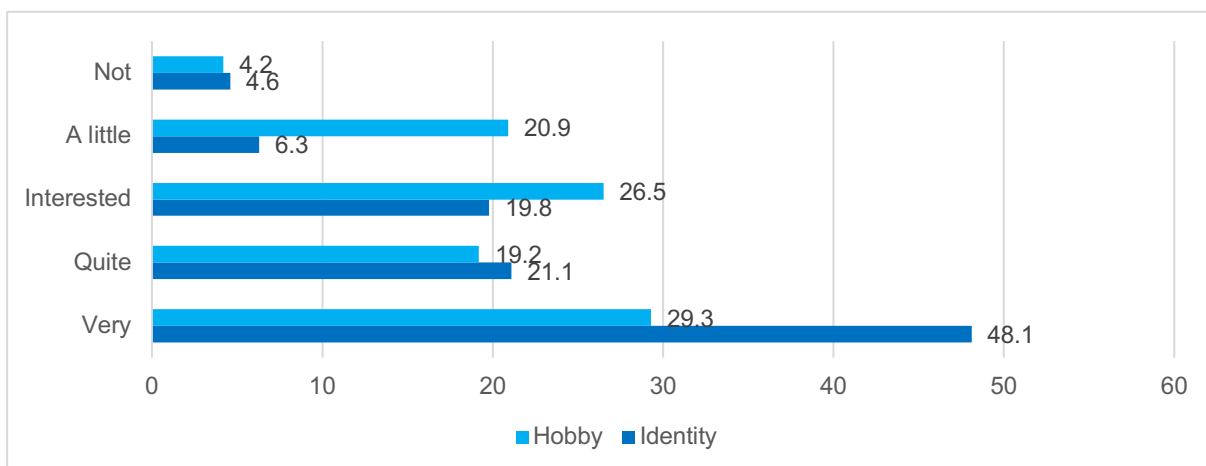
Figure 11 – Percentage of Anglers interested in fisheries management cross-tabulated with the status of angling in their life.

Below (Figure 12) it is evident that anglers are in line with the general population when it comes to participation in groups or associations for sports, leisure and culture. This is not restricted to angling activities as a large group of anglers are not club members and do not fish in competitions.   **This is significant as it suggests that anglers have similar levels of social capital to the general population, especially when it relates to bridging and linking capital**. Rather, we might suggest that angling is an activity where associations, trust and reciprocity have not been fully developed.

Figure 12 - Percentage of people who participated in various activities the past year, anglers and general population compared - Angler survey compared with the British Social Attitudes Survey (BSA).

Figure 13 – Percentage of people answering the question about mistrust – "You cannot be too careful dealing with people" – Angler survey compared with the British Social Attitudes Survey (BSA)

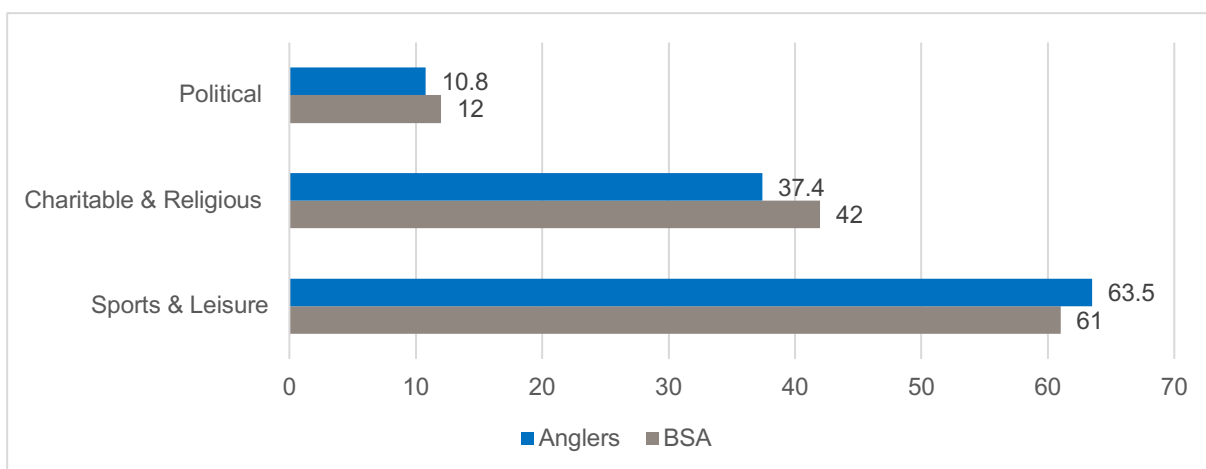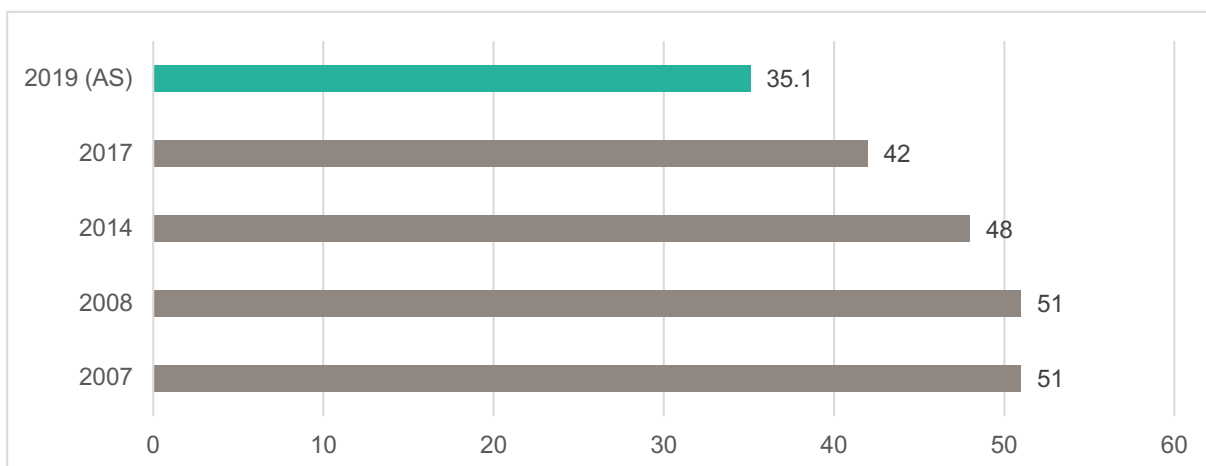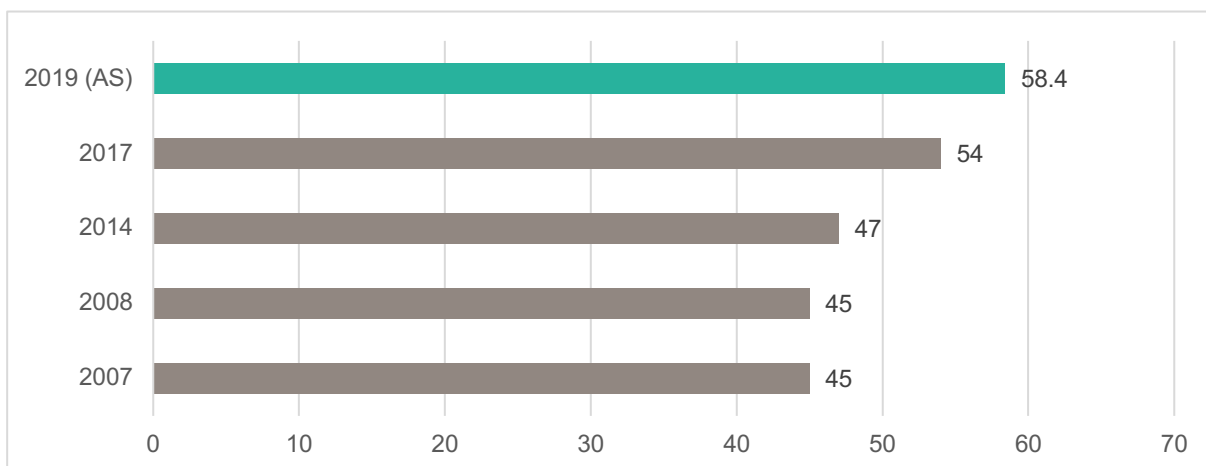*Figure 14 - Percentage of people answering the question about trust - "People can be trusted". Angler survey (AS) compared with the British Social Attitudes survey.*

In Figures 13 and 14 we explore the results from the survey with regards to questions of trust as compared to the general population. In figure 13 anglers are asked a question that measure mistrust of people, and it is found they are less mis-trustful than the general population. In figure 14 we explore a question of how trusting anglers, and they are more trusting than the comparable figure for the general population. These findings support one another, allowing us to report that anglers are more trusting of others than the general population. In figure 15 we then break these questions down by age cohort to show that for those anglers between the ages of 35-64 anglers are more trusting than the general population (National Centre for Social Research, 2018). This finding is important as it suggests that anglers have higher levels of social capital than most of the population and are more trusting. **These findings suggest established formal and informal means of facilitating participation exist, with a cohort of people well equipped to engage with policy and science.**

Figure 15 - Comparison of angler survey and British Social Attitudes (BSA) data by age (in years) for questions of trust, in percentages.

F - Capacity to facilitate participation

> *To assess perceptions as to the capacity the organisations representing anglers and fishers have to facilitate the desired forms of participation in fisheries management and science.*
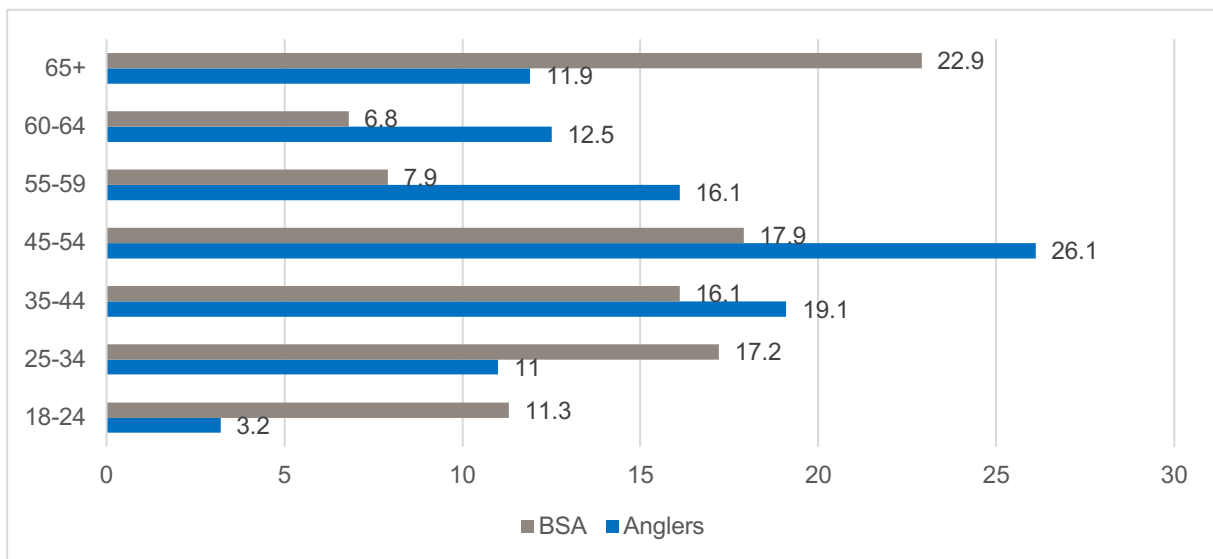
Most of those people who took part in the field interviews and online survey were not members of national organisations but were members of locally focused organisations such as associations or angling clubs. **The fishers tended not to be** members of any national organisation, although they were often aware of particular people working for or associated with those groups. In part this was because they did not see any efficacy in such a membership, which was not necessarily the fault of these organisations but because the difficulties of dealing with government was viewed to be overwhelming.

> *"[A national fishing organisation] been a member five years roughly […] I've never really had anything to do with them but considering the amount of boats and the range of boats that they represent I think they do not too bad." Fisher 2 NE*

Others pointed to the practical and personal help that national organisations provided them with:

> *"[A national fishing organisation]…benefited by having safety equipment with a very significant discount… you could ring them up on the phone and they're usually there and if not they ring you back… they seem to know what they're doing and they've helped me with various applications… and problems I've had…" Fisher 5 B&H*

Local and practical groups were seen as important, with indications of the importance of how national policy and issues are realised:

> *"…little groups like this [ice-buying group] are great really… occasionally MMO come and ask us about quotas… they ask us about when we want the fish which is really important…" Fisher 2 B&H*

As most groups need to be local, as the problems of reconciling different views and needs is very different if not everyone concerned is a local stakeholder:

> *"It's about the engagement. How do you get people engaged? You need a fair cross-section because not all fishermen agree […] You find that if you take them down to species fisheries, then there might be a greater level of agreement, but if you're talking about broad management policy, you're not going to get potters who work on their doorstep every day agreeing with scallopers that have just turned up in the marina here from Wales. They're not going to have similar management ideals, goals or views, are they?" Fisher 5 NE*

Anglers in particular find the online groups to be a helpful place for community and communication without the formality of membership:

> *"Marina sea fishing groups on Facebook, there's quite a few groups like that… I'm not a member of anything formal… they do [represent his views] on the marina." Angler 3 B&H*

Members of a national angling organisation identified themselves in the survey responses, and others were aware of its role in representing recreation sea angling. Harbourside anglers we interviewed were unaware of how fisheries are managed and doubted the efficacy of enforcement activities.

> *"…XXX XXX… hasn't got universal support among anglers… there needs to be a body… some coordination between government and fisheries interest and those bodies to agree how we manage the sea going forward, especially government and the commercials… there needs to be conservation zones and they need to be policed properly…" Angler 6 B&H*

Others tended to see that organisations were not appealing as ways of being represented, looking to more fluid and networked arrangements:

> *"it's building relationships and keeping it to people rather than the fronts of organisations which can sometimes leave you cold." Angler 3 B&H*

Engagement with fisheries science was seen as more desirable, on an opt-in basis:

> *"If there were to be a way that you could put yourself onto some form of emailing list, and you get an update every month, maybe. All these different projects that are going on, and you could just pick the ones that you're interested in and learn a little bit more about them, and decide if you wanted to be involved in them, I think that would be a really good way of getting more people involved [in science]". Angler 3 P*

It is also important to note the anglers often showed little knowledge of how fisheries are managed, and some fishers similarly would refer to government in general terms, or even MAFF[7] rather than Defra – implying that they are not at all familiar with fisheries policy or governance.

G - Barriers to participation

> *To establish the perceived barriers to effective participation in the opinion of individual fishers and anglers, and their representatives.*

Answering this question is closely related to question H below and requires some interpretation. Often the perceived barrier was met with frustration, that their position was not understood or listened to, by people who are physically and social distant, and whose intentions might be suspect. Barriers of culture and trust are often implicit and require some untangling as ultimately how one participates in social life is at question.

Cultural differences are a considerable but largely unobserved barrier to participation. **Fishing is largely an interpersonal working culture where phone calls are more important than emails, conversations more valued than consultations, and images more important than documents.** Meeting people in person is highly valued, and local knowledge is prized. Physical and social distance are therefore seen as being synonymous. Clearly this is less the case in angling where Facebook plays a considerable role, but even these connections appear to be underpinned by face to face relationships.

A larger barrier for fishers is the assumption that national policy is the most salient factor in their business operations. Many fishers pointed to immediate problems within the harbours that threatened their enterprise directly.   In many harbours local councils were seen as being unsympathetic, selling facilities or failing to invest in them, and often favouring leisure and development opportunities. Similarly, efforts to realise greater value for the catch was a pressing concern, with some fishers being involved in consolidation and diversification activities such as owning fishmongers or labelling schemes. This in turn raises questions of local facilities, planning processes and opportunities. **In this regard the activities of local councils were more pressing than environmental policy, discussions of fish populations or dynamics.** The view of larger vessels, representing bigger

---

[7] Ministry of Agriculture, Fisheries and Food (MAFF) became Defra in June 2001.

businesses is that they are more engaged in policy, especially quota and other regimes, but are less rooted in a location.   In these ways, they are viewed as being less accountable locally but advantaged by scale.

Several interviewees reported social media posts being used to target fishing marks, and tactics such as trawlers following charter angling boats. This caution about information bleeds into other areas of discussion about information and knowledge. Disputed knowledge, what is important, who counts it and how it is gathered is a barrier to participation. Part of this is as an angler explains about fishing, there is an element of competition:

> *"It is a bit of a secretive game […] you don't put that out for general knowledge […] other boats are seen as competitors." Angler 4 NE*

Competency and knowledge about fish is highly prized, often used as a marker of an ability to discuss fishing:

> *"we've got no respect for them whatsoever, them IFCAs… this is the problem… you're telling me what I can and can't do, but you can't even tell these fish apart [the species] …They talk to you like you're stupid…" Fisher 4 B&H*

There was a persistent concern that information would be used against the interests of those who provided it:

> *"You listen to the stories from the older generation. Most of them aren't with us now. As soon as you divulge any information, they want to use it against you. "How much are you catching here? How much are you catching there?" Then all of a sudden, the next year you're not allowed to catch it. That's the sort of thing we don't want to see". Charter Skipper 1 Weymouth*

Others fear that this is exactly what is happening:

> *"when the Lass rang up last year to ask if I would take her to sea, I said: 'there's not a boat in on this coast that will take you sea.' […] it was made to look like the quota cut was on CEFAS's recommendations, but it wasn't [it was the MMO]." Fisher 3 NE*

And in the majority of case study areas there was a great deal of uncertainty expressed about what happened to data, and how it was used:

> *"…you never really find out what they do with the information… you've got to be careful with that 'how it's going to make a difference' because you never know… but it would be nice to know what they've done and how they use it… whether they use that for quotas." Fisher 4 B&H*

National stakeholders also reflected on this tension between data and knowledge:

> *"MMO ask people for data that they have but then said the quality wasn't good enough so didn't use it [didn't say criteria beforehand]… this has caused such bad feeling… When data came out it was very specific for certain sites and nothing for others, so it didn't give a good overview at all." NLI 2*

This tension between what the interviewee describes as ad hoc knowledge, or what many fishers and anglers see as experience, is this stakeholder knowledge of the marine environment:

> *"It needs to be clear what data they actually need…. In some cases, they set too high scientific principles… they might need to do this… but doesn't work really well for general users who have adhoc knowledge… missing a whole great suite of grey area knowledge." NLI 2*

The proposal here implies a degree of participation and co-production that is not yet present in the policy process, but is in line with what many local stakeholders, not just fishers and anglers, are interested in:

> *"The first thing you've got to do is make it really relevant, what is it actually going to be used for… information needs to go back to them. Really value their local knowledge and show them how valuable that is in setting policy… how that can be turned into science and then policy, showing what that process is." NLI 2*

H - Success factors

> *To identify and understand if there are any systematic patterns such as geographic, position in the industry or recreational sector associated with participation, or desire for changes in participation.*

As we have noted above **many of the fishers feel that they are misunderstood** within the fishing policy community on a number of levels. As owner-operators of micro or small businesses their capacity to engage with policy processes is limited, especially if they are held away from harbours or at times that clash with their business activities. It would seem that three broad strategies have been adopted by fishers to meet the demands of the present situation. The first is to **consolidate** on their business activities and 'stonewall' policy initiatives, hunkering down and persisting. This strategy relies on making use of their bonding social capital or contacts within the industry. Most fishers note that regulation has made their businesses less flexible, but as an IFCA officer noted there has been a change in when and where people fish:

> *"So, we've gone from what was traditionally a potting fishery over the summer, so mainly lobster and a bit of crab, to a potting fishery through the entire year that's pushing further offshore for crab through most of the year and then lobster over the summer, closer to the shore". IFCA 1*

Another group of fishers have used a strategy of **accommodation** with policy and regulation, adjusting their businesses to respond to opportunities and tactically engaging with a participatory mechanism. As the IFCA officer notes, this includes perhaps ranging further out to sea, fishing all year or purchasing extra quota or gear. This approach requires the use of bridging social capital, to gather the necessary information and to adjust the fisher's self-identity. It requires maintaining their bonding capital within the fishing industry, often through a strong focus on catching fish. The third strategy we note is that of **innovation** engaging with policy and policymakers with a view to transformation, but also others such as fishers, retailers and processors, leveraging linking social capital to forge new connections. Examples of this include setting up fishmongers and restaurants, provenance schemes and business diversifications. Most fishers are engaged in the first two strategies, and the third is least common, but we have seen examples on the south and north east coasts.

CONSOLIDATION — Focus on existing business opportunities / 'Stonewalling' policy initiatives / Bonding social capital

ACCOMMODATION — Adjusting business to regulatory environment / Tactical engagement with policy & science / Bridging social capital

INNOVATION — Changing business model / Strategic engagement with policy & science / Linking social capital
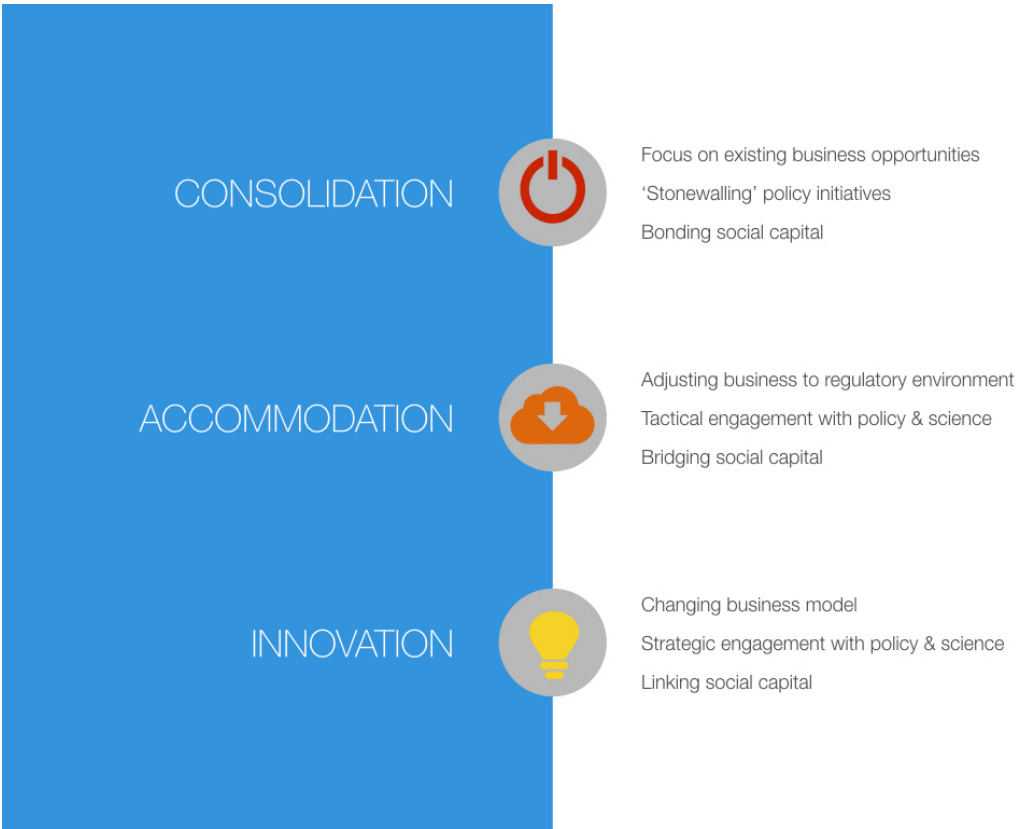
Figure 16 - Business strategies in relation to policy and social capital

Local communities make a difference to the ability of individual fishers to orientate their businesses, and innovation in particular requires a supportive environment. Our observation is that in the presence of well-regarded IFCAs, FLAG groups, engaged researchers and entrepreneurs are features of the context in which the strategy of innovation can take root. Local organisations that bring the various stakeholders together and can exercise some local autonomy appear to be have particularly successful. Innovation is not a one-shot strategy with the more innovative fishers having to repeatedly re-imagine their business models and options. They are particularly interested in strategic participation as they look for new business opportunities, as part of a wider appetite for information.

As our evidence demonstrates above the key positional determinant of the desire to take part for anglers is **membership of an angling club** (see Question E). Club members tend to be older, and in our survey, have greater levels of trust than most of the population. This is in line with the observations of social capital theory and data of the British Social Attitude survey that sports and cultural associations can boost trust and social capital. Several of the charter skippers interviewed also pointed to the role of the clubs, such as those focused on particular species such as sharks or bass, who have an infrastructure that would help with data collection, including data in some cases. The angling sector may be characterised by disagreement about the scale of participation in the sport, but the desire of organised sea anglers for a great part in fisheries management and science is very clear.

I - Patterns of participation

> *To identify where and how in fisheries science and management processes fishers and anglers can contribute through their participation to greatest effect.*

The most common area for **fishers and anglers** to express an area that they could contribute to science and management is through their knowledge. Most of the national level interviewees shared the view, that fishing boats could be "floating laboratories" collecting data, not only about fish but the wider marine environment such as water quality and temperature. The status of this knowledge many accept was not in the form of most ecological data:

> *"I think they know their area of expertise really well. They wouldn't necessarily think of their knowledge as scientific evidence, see it as their local knowledge... The problem is that it's not necessarily recorded." NLI 2*

As noted above there are reservations by fishers about how the data collected in many management and science projects is going to be used. For anglers there were fewer concerns:

> *"You've got a lot of clubs in a close proximity… […] you could take six clubs' data over the winter, the amount and sizes of the cod, because I'm more than willing, myself, you give them data, to measure every codling […] we have 24 matches a year, I could give them the data from the matches." Angler 3 NE*

In the angler survey those who considered themselves more experienced at angling (53.9%) are more likely to be members of clubs and be interested in greater participation (see Figure 11). When asked what would motivate them to take part in a marine science project the most popular answers focused on engagement and exchange of knowledge, with the most popular being that the intervention is consequential (see Figure 18).
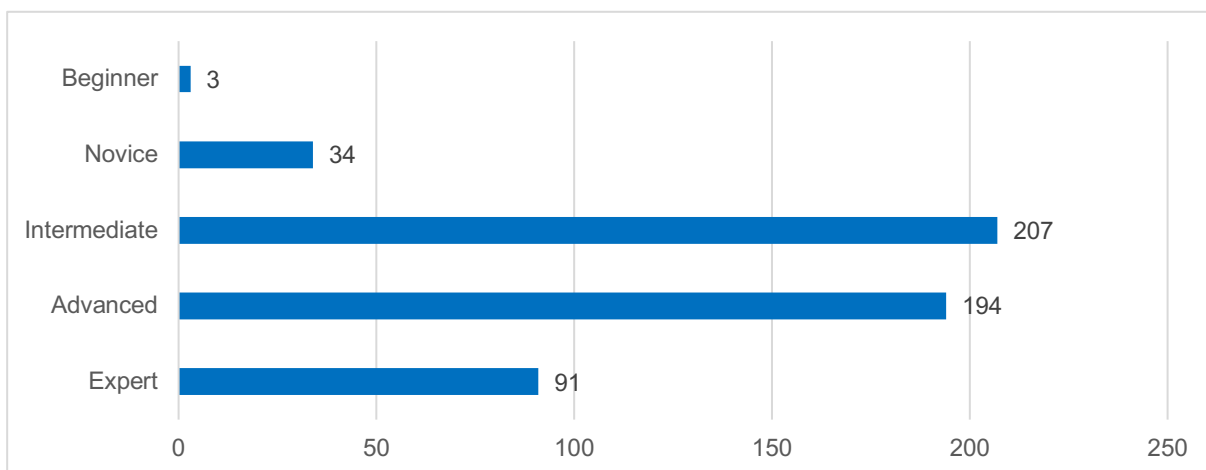
Figure 17 - How experienced would you say you are at sea angling?

Some of the interviewees mentioned the concept of 'citizen science', as a form of science in which anglers and fishers might participate more fully. Many fishers and some anglers are simultaneously sceptical of how marine science is used and fascinated by its possibilities. We note that citizen science projects are very varied, and from our research we would suggest that only a few of the models of citizen science would meet the standards that anglers, but more particularly, fishers are requesting. Interviewees often demonstrated a sophisticated understanding of the limitations of ecological surveys, and the variations in local conditions, that might confound results. **It is very clear that fishers, and anglers, want their experiential understandings of fish and the wider marine environment to be taken seriously**. In line with discussion of co-management above, this implies a co-production of a shared experimental design and analysis.
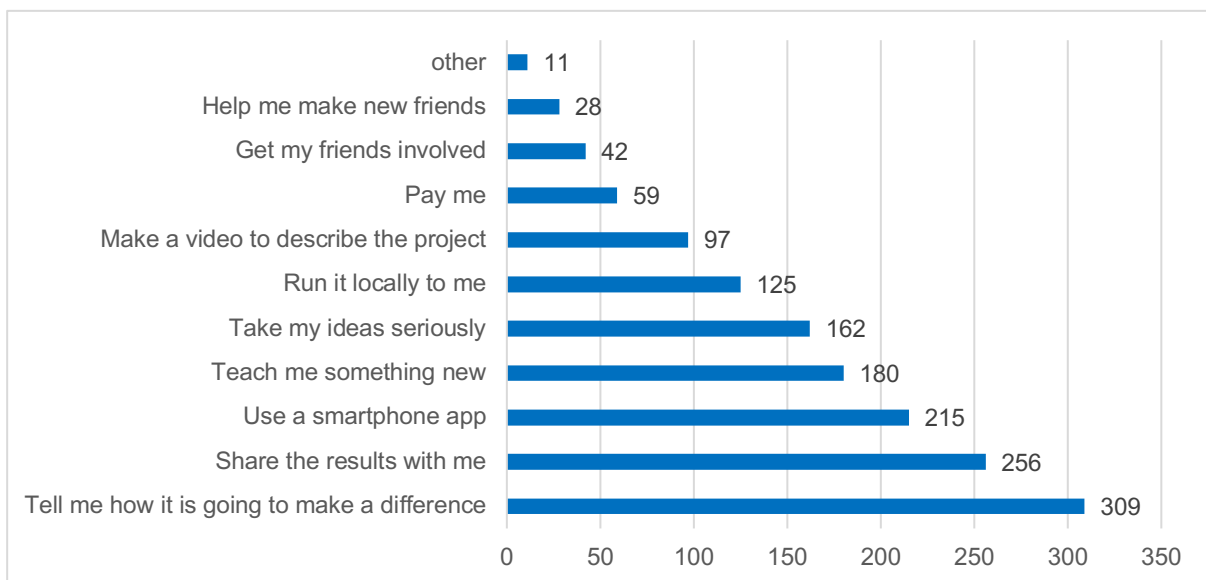

Figure 18 - If someone were designing a marine research project how could they persuade you to take part?

One national stakeholder reflected on a pilot project where fishers controlled the data collection and this data had challenged the fishers' expectations:

"It's their own data, that they had generated, and XXXX takes a bit of the back-bite from the fishermen, because the data wouldn't say what they wanted it to say". IFCA 2

Successful engagement with fishers and anglers could potentially transform the scope and scale of data available as well as confidence in its integrity.   It would also foster investment in the relationships that build trust and community.

J - Where participation can be most impactful

To understand the vital success factors to partnership working in the view of fishers, anglers and their representatives.

Although many of the **harbourside fisher interviewees**, in particular, felt alienated from the policy process, often after years of attempting to engage with it and make contributions, our research has shown the basis of a framework and desire for greater partnership working. Not many of these points were made explicitly but are implied in discussions of what is really disliked by the present situation, there are positive suggestions as well.

We have characterised fisheries management and science as a low trust environment to suggest that trust as an element of social capital that needs to be built up (see about social capital below). There are areas and topics where trust is being built up, relationships fostered and capacity increased, so it is important to build from those examples

The **call for better communications** has become something of a cliché, but the evidence here suggests different modes and forms of communication. Fishing remains an **oral culture**, with personal conversation as well as the radio and mobile telephone highly valued. This implies interpersonal contact, mutual access, as well as not assuming high levels of literacy or arguments that cannot be readily explained. It is noticeable that in angling Facebook groups the preponderance of videos and photographs, again not assuming high levels of literacy. Where various local management groups are valued it often hinges on the way in which local officers and representatives relate to local people, rather than specific policies.

It is especially important to recognise that much of the alienation relates to lack of **community development**. Our definition of community in this context extends to both communities of place and interest, as while engagement at the level of individual geographic locales is important, there are some important bridges to be built within and across the various communities of interest and policy structures – particularly on the commercial side. It was clear that the work of FLAGS had made a difference in several areas, bringing people together and fostering an exchange of views, as well as being able to take action.

Partnership working requires **reciprocity and accountability**. Fishers value people taking time for one-to-one or small group meetings, clearly explaining the purposes of requests and clarity about the limits of their remit. Included in this would be making it clear how local users can complain about the institution, promoting mutual accountability. Where participation was working more successfully it was built on multiple organisations, and the individuals within them, taking time to foster relationships. The lack of membership of national representative bodies, or engagement with the topic, suggest that it is not viewed as rational presently to make such an investment. Local organisations, fishers' associations or angling clubs, which embody these values and forms are well established.

Conservation regulation generally requires a reduction in the flexibility of the fisher, and it is often difficult for that to be directly addressed, without the provision becoming ineffective. **Locally negotiated agreements** are popular with fishers if it limits competition with their immediate peers, including recreational anglers, and comments on the survey suggest this would be the same for anglers. Acknowledging the costs, and the cumulative impacts on fishers' activities is an essential part of fostering mutual understanding. Fisheries bodies might want to take the chance to champion fisher's businesses to local authorities or to promote new opportunities jointly.

For those who often feel misunderstood or over-looked 'citizen science' projects that only require participation as data collection may compound feelings of marginality (Lowe et al., 2019). Rather approaches need to **recognise the expertise of fishers and anglers**, which maybe expressed in different terms that institutional science but is held by those with applied proficiency in the subject. To construct projects where fishers and anglers are only data collectors is to re-produce the contemporary power arrangements. There are clearly areas where observational data or 'crowd sourcing', derived from angling club records, postings on Facebook (Hart et al., 2018), or mounting sensors on boats may be appropriate as entry points but a deeper engagement is necessary to fully realise the opportunity present in this desire for participation.

Glossary

AC – Advisory Council

CEFAS – Centre for environment, fisheries and aquaculture science. Defra – Department for environment, food and rural affairs.

Defra – Department for Environment, Farming and Rural Affairs

FLAG – Fisheries Local Action Group

IFCA – Inshore fisheries conservation authority.

MAFF – Ministry of Agriculture, Fisheries and Food until 2001 replaced by Defra

MMO – Marine Management Organisation.

NGO – Non-Governmental Organisation.

Seafish – A UK wide non-departmental government body that supports the seafood industry.

SDGs – the Sustainable Development Goals of the United Nations.

Appendix 1 - Research Approach

The team visited five **case study ports** during the project, informed by consultation with the steering group around a suite of possible options. While previous projects have selected ports and harbours to focus on commercial fishing (Reed et al., 2011), and separately for angling (Armstrong, 2013), selecting appropriate case study sites for both raised a number of unique challenges. The geography of commercial fishing is well established, with a pronounced focus on the south of England, and in particular the south west peninsula. This is not to suggest that commercial fishing is unimportant in other areas of England, but that it is to a lesser extent and often focused on specific towns or areas. With considerable data resources available the identification of harbours that are important for fishing - in either the under 10m sector or the over 10m sector or both - was relatively straightforward. Adding considerations of angling, however, made this picture somewhat more complex as anglers are differentiated in terms of interests, tactics and geographical focus. Boat based anglers clearly have a focus on landing points and harbours, while shore based recreational anglers also use fixed points such as rocks, piers and harbour walls. But several groups of sea anglers are focused on other areas, such as beaches, estuaries and cliffs, with a further sub-group of those using small boats and kayaks. It is also salient to consider questions of timings and access, as angling forums make it clear that many people take the chance to fish whilst on holiday, in addition to those for whom it is a regular hobby.

The research team took the approach of selecting a range of harbours by considering the harbour as the locus of commercial and recreational activity with a consideration of further proximate recreational activity in the surrounding locale.   The first stage was to take a list of commercial landings from January 2018, focusing on the value of landings to those ports and the number of commercial boats under and over 10m that are registered there (using February 2019 data). This information was used to produce 3 lists of ports, comprising the top 20 ports for each of catch values; number of under 10m vessels; and number of over 10m vessels. An initial long list of 19 ports was then assembled for further investigation, based on those ports that appeared in at least two of the three lists. In doing so care was taken to ensure that ports dominated by under 10m vessels were not side-lined by either catch values or numbers of over 10m vessels. For the 19 ports selected through the commercial data we then added the following data: a set of options data regarding the scale of tourist visitors - to try to gauge the potential for anglers visiting; the number of charter boats which use the port as their base - reflecting both holiday anglers and those who are more committed hobbyists; the number of angling clubs and associations local to the area; the number and presence of previous science projects and/or examples of fisheries participation; and the presence of organisational offices that may indicate possible vibrancy of participation, together with the potential for receiving assistance in the practicalities of setting up and approaching the field research.

This process yielded two lists for discussion with the steering group, with the final selection and corresponding numbers of interviews undertaken in each indicated below.

Location	Fishers	Anglers	Charter Skipper	Others
Brighton & Hove	7	7	0	1
North Shields	7	3	2	0
Plymouth	1	4	0	3
Scarborough	3	6	0	0
Weymouth	5	1	2	2

Table 2 - Interviewee types and numbers per location

In practice we found a gap between the boats registered at a harbour and those present in it, as well as our ability to access the people working there. We therefore took a more flexible approach; in most instances these harbours were the base for the investigation and not always the core location. It is also important to note that some of the people we interviewed for this strand of the research had national and international experiences, either of representing fishers or engagement with marine science.

Recruiting people to take part in the **online survey of anglers** faced the challenge that there is no sampling frame from which we could draw, and as an open access activity clubs and associations might not be a reliable

source. The most resource efficient method therefore was to recruit anglers through online sources, especially as with the limited time available the use of printed media would inevitably delay recruitment. To that end we posted calls for participation to our online platform onto 18 Facebook groups focused on sea angling, spread across England geographically and by a variety of techniques. One researcher used their personal Facebook profile to join these groups, demonstrating knowledge of sea angling, and including photographs that were taken on a fishing kayak at sea.

Figure 19 - Map of responses to the Sea Angler survey by postcode

As this map suggests there was a concentration of respondents in the south west and south east, but there were participants in areas further from the coast. There is clearly a broad correspondence with the areas for our fisher-focused fieldwork and the respondents to the survey.

To recruit the **national stakeholders and representatives** we took a similar snowballing approach based on the connections that the research team - plus the Defra team - had to gather interviews.   This approach worked well for the fishing sector and angling sector, where connections had already been established. Consequently, they were well represented in the research, but there was a problem with contacting several of the associated bodies. Neither the MMO, nor 'Seafish' took part in this project. Both were contacted multiple times; discussions were held about arrangements, but no interviews resulted. Our attempts at recruiting participants from IFCAs met with a low level of success and was eventually solved by interviews collected as part of the fieldwork phase of the research. We conducted eventually 9 national level interviews. This clearly represents a drawback of the sampling strategy, as the research team should ideally have approached both organisations at a national level. Equally, it may represent a failure of those organisations to dedicate capacity to this project.   It is important to note that the borders between these streams of data are porous or 'fuzzy'.   Some of those we interviewed locally were engaged at a national level, either as a deliberate part of our sampling or co-incidence, whilst some people who took part in the angler survey were professional fishers.

Fieldwork

The fieldwork team for this project comprised a mixture of men and women, all of whom have either experience of the fishing sector or social science field work, and in most cases both. Most of the team from the CCRI were involved in a preceding project for Defra considering mechanisms for improving participation in data collection. This meant that the team had recent contact with a range of stakeholders in the industry, as well as previous experience of field work in fisheries studies. Prior to setting out into the field for data collection, safety discussions were held and where possible joint working was undertaken. Most of the contacts were gathered through gatekeepers who could provide recommendations as well as contact details. In the angler survey these gatekeepers were moderators of the Facebook groups, for the case study areas they were people such as FLAG officers or Harbour Masters or retailers, as well as personal contacts of the research team. This facilitation of contact is important as no sampling frame such as a register was available to the team. And although vessels are listed by the MMO the contact details of skippers or business owners are not. Clearly this introduces an element of bias, which the team worked to counter by 'snowballing' – asking the contacts made for further contacts. Most of these contacts were accommodating, friendly, open and engaged with the research, as word of our approach spread in these communities, we were made increasingly welcome. The majority of those approached in this research were at the very least courteous and professional in their attitude, but often went beyond that to accommodate our requests for information.

As a way of balancing and extending the sample of participants we also employed the 'walk-up' or interception interview technique, which involves seeking to approach people at the quayside, introducing the project and seeking an interview. Using this approach, we encountered misogynistic aggression on one occasion toward a member of our field team, whilst they were working alone. On a separate occasion one of our team during an informal interview heard threats of violence toward a named individual who had 'crossed' the interviewee[8]. These problems were not isolated to fishers, some of our postings on Facebook angling groups, asking for participation in the survey were met by rudeness by a small minority of people. We also encountered some unforthcoming attitudes from those working in arms-length government or research bodies. As we discuss below this is indicative of a spectrum of responses but signals problems within the fisheries community in its broadest sense.

Further information on methods and theory

The research team are developing a series of peer-reviewed papers and reports which set out their theories about participation more fully with regards to these topics, please see: www.ccri.ac.uk

---

[8] The Police were aware of this issue.

References

ARMSTRONG, M., BROWN, A., HARGREAVES, J., HYDER, K., PILGRIM-MORRISON, S., MUNDAY, M., PROCTOR, S., ROBERTS, A., ROCHE, N. & WILLIAMSON, K. 2013. Sea Angling 2012 – a survey of recreational sea angling activity and economic value in England. London: Defra.

HART, A., CARPENTER, W., HLUSTIK-SMITH, E., REED, M., GOODENOUGH, A. & ELLISON, A. 2018. Testing the potential of Twitter mining methods for data acquisition: Evaluating novel opportunities for ecological research in multiple taxa. *Methods in Ecology and Evolution,* 9, 2194-2205.

LOWE, P., PHILLIPSON, J., PROCTOR, A. & GKARTZIOS, M. 2019. Expertise in rural development: A conceptual and empirical analysis. *World Development,* 116, 28-37.

NATIONAL CENTRE FOR SOCIAL RESEARCH 2018. British Social Attitudes 35. London: National Centre for Social Research.

PUTNAM, R (1995) *Bowling Alone*, New York, Simon & Schuster

REED, M., COURTNEY, P., DWYER, J., GRIFFITHS, B., JONES, O., LEWIS, N., MOSELEY, M., PHILLIPSON, J., POWELL, J., ROSS, N. & URQUHART, J. 2011. The Social Impacts of England's Inshore Fishing Industry: Final Report. London: DEFRA.

URQUHART, J., COURTNEY, P., POWELL, J., REED, M., CHISWELL, H., LEWIS, N., YOUNG, I. & DELAHUNTY, T. 2019. Feasibility study for a survey of fishers: Draft Final Report to Defra. Cheltenham: The Countryside and Community Research Institute