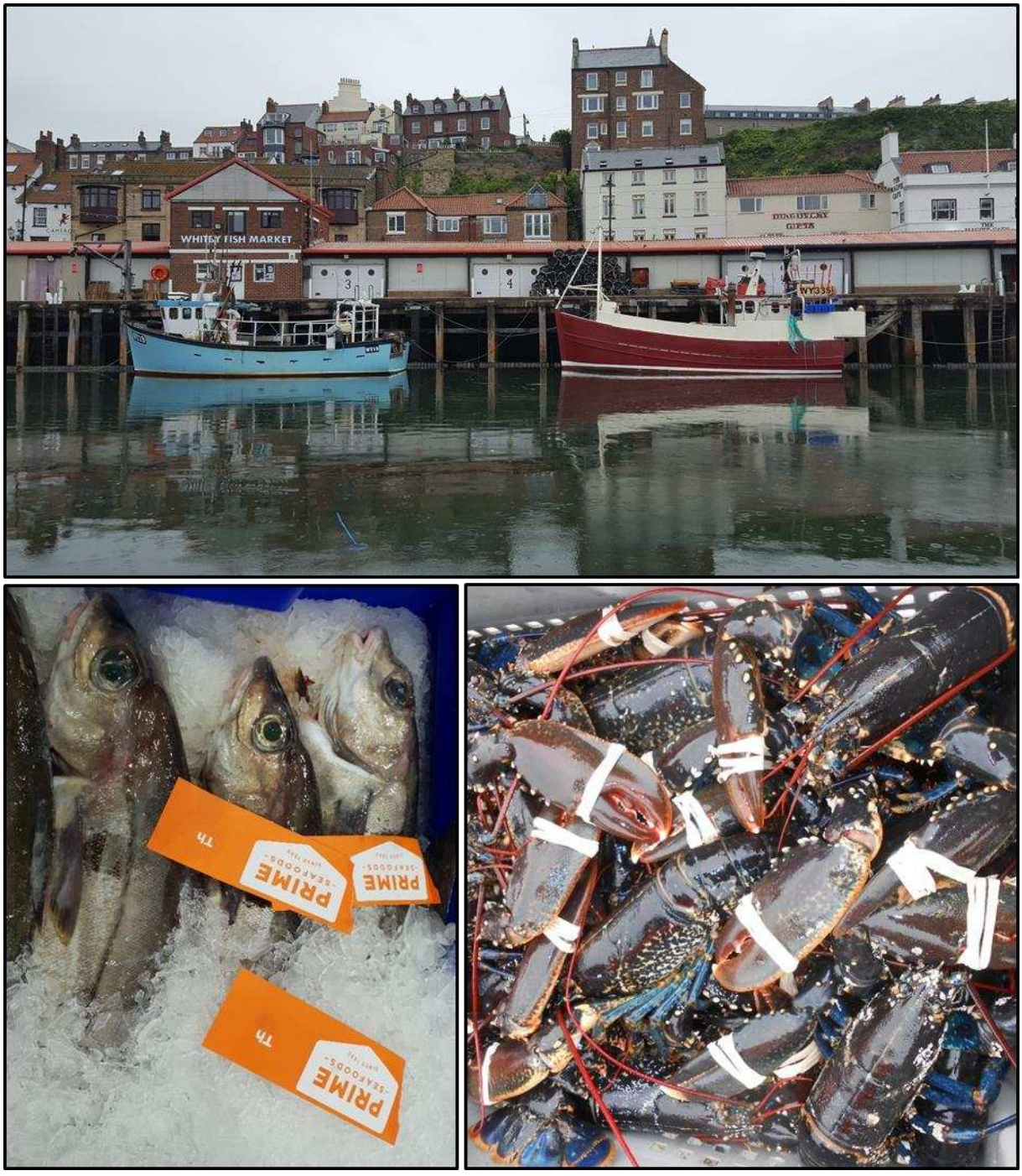
Building a bridge over troubled waters: An analysis of fishers' trust in UK fisheries management

Eleanor Ford and Bryce D. Stewart,
Department of Environment and Geography, University of York



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Summary:

- Effective management of fisheries relies on high levels of trust between the fishing industry and managers and scientists. We therefore used an online questionnaire to examine how well the UK fishing industry trusted the key governing and scientific bodies, and how the views of fishers aligned with UK Governments stated management goals and measures.
- Participants in our study had low levels of trust in nearly all the institutions included in the survey, however, there was high variation between individual responses. Only the Centre for Environment, Fisheries and Aquaculture Science (CEFAS) had a mean score above 3 of out 5, significantly higher than Defra, the Marine Management Organisation (MMO) and NGOs.
- The management goals of fishers aligned well with several goals from Defra's 25-year Environment Plan, particularly sustainability and the need to protect the seabed. However, increasing the coverage of marine protected areas (MPAs) was the least popular goal among participants. Increased use of selectivity devices was most favoured as a management tool, while MPAs were again the least popular.
- More encouragingly, those fishers who had previously collaborated with scientists and managers showed higher levels of trust across the board. We recommend increased use of fishing industry-science partnerships and co-management as key ways to increase trust as the UK seeks to reform and improve its management of fisheries after Brexit.

Background:

The nature of fisheries as a common pool resource puts them at risk of the "tragedy of the commons". This is because as a common resource fisheries are generally accessible to all, and often the management of fish stocks does not reach the criteria for effective common resource management (Dietz at al., 2008). These criteria include a strong social network and effective management, one of the areas were fisheries is often lacking. As such, effective fisheries management is a cooperation problem as much as an environmental issue. One of the foundations of successful cooperation is trust. Previous studies have indicated this to be an area where fisheries management is particularly deficient. In the United States, fishers have identified mistrust as a major obstacle to their engagement with cooperative management practises (Hartley and Robertson, 2008). Previous work in the EU supported this notion, and suggested that barriers to greater trust between fishers and governing bodies include a lack of communication, lack of credibility and political interference (Glenn et al., 2012). Another illustration of the discontent, especially in UK fisheries, was the 2016 Brexit vote, with one study of Scottish skippers suggesting 92.1% of those surveyed were in favour of Brexit before the Referendum (McAngus, 2018). Rhetoric from Leave campaigns strongly promoted the potential benefits of leaving the EU due to extraction from the Common Fisheries Policy (CFP). In the UK there appears to be considerable distain of the CFP, due to its heavily politicised nature creating exclusion and opaqueness around policy developments, all of which add to feelings of mistrust (Jentoft et al., 1998). The future of an effective fisheries policy in a newly independent UK would therefore be greatly advantaged by an in depth analysis of the current relationship between fishers, managers and scientists. That was the premise of our study.

Research Questions:

- What is the perceived trustworthiness of fisheries management governing and scientific bodies in the UK?
- Do fishers' goals for the marine environment align with governance goals?
- What are fishers' opinions of current and future management tools?
- How does fishers' participation in cooperative practise relate to their trust in governing and scientific bodies?

Methodology

To study the levels of trust within UK fisheries management this study looked to psychology literature to try to gain a greater understanding of how trust develops within institutions. Butler and Cantrell's 1984 work on institutionalized trust broke trust down into five components; integrity, competence, transparency, benevolence and cooperation (Butler and Cantrell, 1984). These five components were included within in our survey. Participants were initially asked demographic questions and then about their fishing activities. These questions were followed by the trust components translated into statements about fisheries governing and scientific bodies in the UK. Participants were asked to rank their agreement with the statements on a 5-point Likert scale, from strongly disagree (1) to strongly agree (5). All participants were presented with Defra, and then a choice of bodies relevant to their area. The second component of the survey was to assess the alignment of goals between fishers and management. Participants were then asked what their goals were for the future of UK fisheries, and then how important they felt goals from Defra's 25-year Environment Plan (Defra, 2018) were (although these were not identified as such) using a Likert scale of very unimportant (1) to very important (5). Participants were also asked about their thoughts on the effectiveness of current management tools and potential future tools; these were presented to them again on a Likert scale of very inadequate to very effective. The final section asked participants to self-assess their current participation level in cooperative fisheries management or science schemes and to describe what these were. The survey was distributed from 1st May to 24th May 2018 via social media platforms (Facebook and Twitter) and by email.

Results

Forty-three responses were collected from active fishers, of which 31 surveys were complete and 12 were partially complete. Of the fishers that responded, 50% of participants landed their catch in England, 43% landed their catch in Scotland and 7% landed their catch in Wales. Fifty-nine percent of respondents used under-10m vessels to fish, with the other 41% using over-10m vessels. The majority of participants identified themselves as skippers (76%). In terms of catch, 48% of participants caught shellfish species, 30% caught demersal species and 22% of participants caught pelagic species. There was variation in the gear types being used by participants. Pots and traps at 30% were the most commonly used gear, followed by hook and line (21%), trawls (20%), fixed nets (15%), dredge (11%) with the least represented gear type being drift nets (3%).

Excluding those governance bodies that received low response rates (1 or 2 participants), nearly all governing and scientific bodies received an average score of three or below, which equated to a largely negative response in terms of trustworthiness. Only CEFAS scored slightly above 3, while the Marine Management Organisation, Welsh Government and NGOs scored significantly lower and were considered the least trustworthy. There was also a significant difference in the goals that participants felt were important, with every other management goal perceived as more important than a growth in marine protected areas. Two goals were perceived as equally the most important across the participants; these were adequate protection of the seafloor to support ecosystems and ensuring sustainable populations of commercial species. There also appeared to be preferences as to which tools were perceived as most effective. Scientific observers were preferred over using CCTV, and a days-at-sea approach (effort control) was considered more effective than using total allowable catches (quotas).

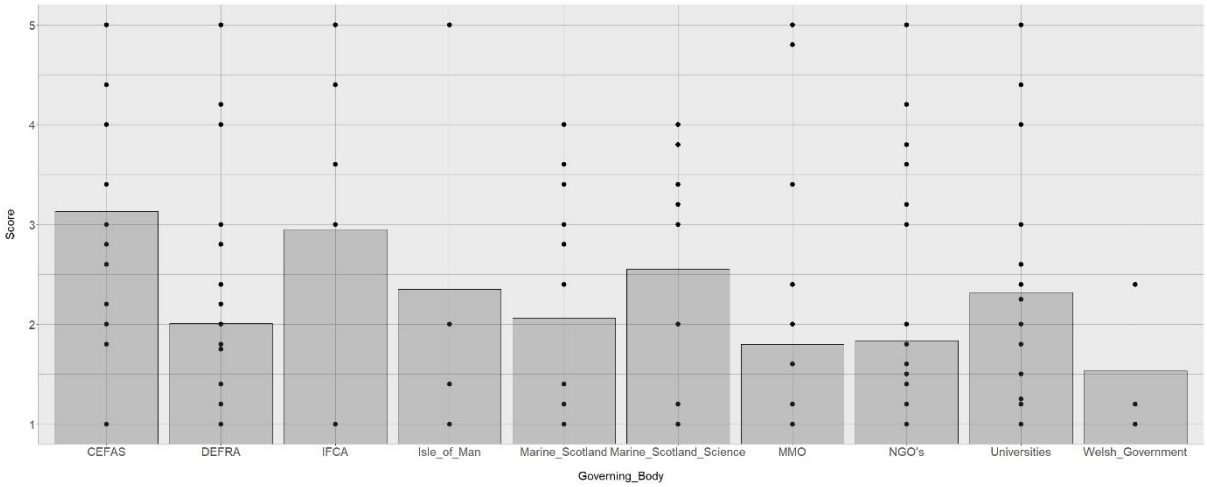

Figure 1. The average scores given to each governing or scientific body, represented by the grey bar, with • representing individual participants responses and how sample sizes differed between groups. 1-5 on the axis indicates the Likert scale, with 5 representing a Strongly Agree response and 1 representing a Strongly Disagree response.

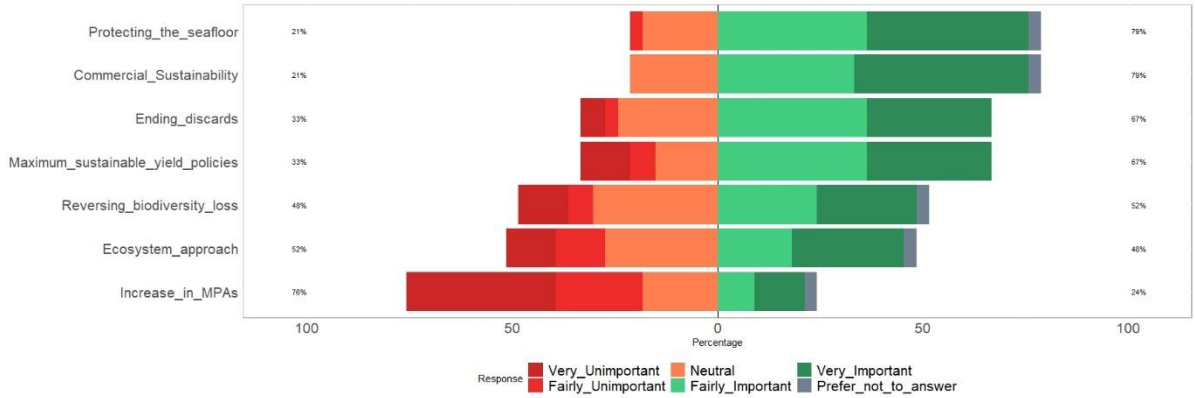

Figure 2. Participants opinions of the management goals included in the survey (n=34).

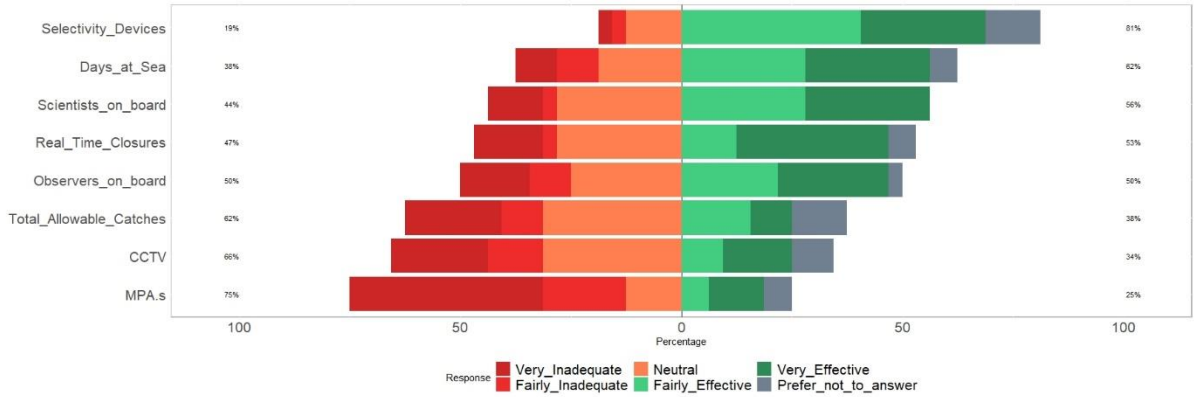

Figure 3. Participants opinions of the governing tools included in the survey (n=32)

Co-operation the key to improving trust?

By combining all of the trust scores that participants had shown towards governing and scientific bodies, a trust intensity measure was calculated for each participant. This was the sum total of the

participants trust responses, divided by the sum of the highest possible responses that could've been given, dependent on how many trust questions that participant had responded to. This index was used to examine the correlation between a participant's trust and their self-assessed involvement in cooperative schemes. A Spearman's correlation was found to a significant positive correlation between the trust intensity of an individual and their cooperative participation level.

Conclusion and Recommendations

The generally low levels of trust that the UK fishing industry participants we surveyed had in managers and scientists are a concern. Although our sample size was moderate, it covered a broad and largely representative cross-section of the UK fishing industry. Mistrust in fisheries management is also known to have a long history in the UK (Phillipson and Symes, 2018), and is common in other regions around the world (Hartley and Robertson, 2008).

Despite the above findings, the positive relationship we observed between previous co-operation and increased trust in managers and scientists was encouraging and suggests a way forward. This is something of a 'chicken and egg' scenario, but it stands to reason that working together will help fishers, managers and scientists to share their perspectives and aspirations more effectively and therefore increase trust in each other.

We therefore recommend increased use of fishing industry-science partnerships (GAP 1 and GAP 2 Projects) and co-management as a key way to increase trust as the UK seeks to reform and improve its management of fisheries after Brexit.

The high importance that fishers placed on protecting the seabed and ensuring the sustainability of commercial fish stocks was also very positive. Although MPAs were clearly unpopular among the fishermen, more nuanced approaches to spatial management such designating zones for different sectors of the fishing industry may allow the varied needs of fishing and conservation to be balanced.

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