#FutureOfOurInshoreFisheries

Future of Our Inshore Fisheries

Conference Report, 8–9 October 2019

REPORT COLLATED BY SEAFISH


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Contents

Introduction

Inshore fishing is a cornerstone of many of our rural and coastal communities and makes a significant contribution to regional economies and our cultural heritage. Ensuring a sustainable and profitable inshore fishing industry is critical to enabling coastal communities across the UK to thrive and to provide for current and future generations.

However, despite their importance, the management of our inshore fisheries has been criticised for being overly complex, inconsistent in its approach and ineffective at delivering on long-term sustainability goals.

The **Future of Our Inshore Fisheries** project is an ambitious, collaborative and co-created initiative aimed at addressing these issues and establishing an effective inshore fisheries management regime. Central to delivering on this ambition is establishing how best to provide for the use of the resource (recognising the - often unique - issues facing coastal communities), while ensuring its long-term sustainability and the management of the wider marine environment.

In 2019 **The Future of Our Inshore Fisheries** Steering Group was convened, bringing together representatives from the UK fishing industry, government, and the research community with a key aim of collaborating to find workable, enduring solutions for the future management of this important resource.

The Steering Group recognised that the first step in this process must be to understand the nature and context of the problem and to learn about the issues and challenges from those that understand them best – fishermen. A discussion event, the 'Issues and Ideas' workshop, was held in June 2019 with fifty representatives from across the sector to discuss the issues facing our inshore fisheries and to identify how these issues might be overcome. This initial event generated a list of key areas in need of wider discussion and further research, and a major outcome of the workshop was to develop an agenda for a larger discussion event; The Future of Our Inshore Fisheries Conference, held in October 2019.

This report summarises the key points from discussions held over two days at The Future of Our Inshore Fisheries Conference, and frames the direction of the project going forward.

The Stakeholder Conference

This event attracted almost 180 attendees (including many active inshore fishermen) and provided an opportunity for participants to learn about examples of best practice from across the globe, and also work that is already underway within the UK. However, a key focus of the event was the opportunity that it provided for participants to discuss ideas and to share experiences.

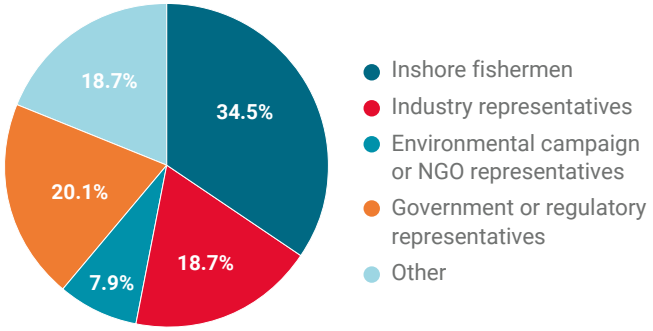
The event created a unique opportunity to gather views from a wide cross-section of industry stakeholders and begin a collaborative process of knowledge exchange, discussion, and problem-solving. The pivotal event marked a step-change in the thinking around how we could approach fisheries management in the future, and established a commitment from industry and government to embark on a programme of collaborative management. The conference highlighted the challenge ahead – to deliver a world-class inshore fisheries management system, one that is capable of ensuring our fisheries, our marine environment, and our coastal communities are thriving.

Attendance at the conference and the earlier 'Issues and Ideas Workshop' demonstrated that there is both the appetite and the willingness to succeed.

Attendance and perceptions of the conference

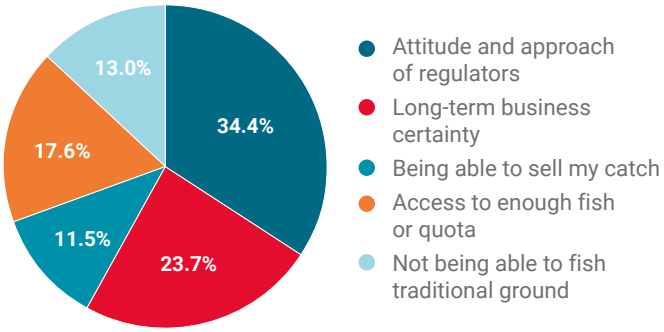
Reflecting the importance of this conference to both the inshore fishing industry and government, the majority of attendees were inshore fishermen (34.5%), inshore fisheries representatives (18.7%) or regulators (20.1%) (see Figure A).

Figure A. Who was at the conference?



Asking attendees about their key concerns for the future of inshore fishing in the UK (see Figure B), it is clear that improving relationships between fishermen and regulators is important, as many attendees are concerned about the attitude of regulators (34.4%). Other common concerns were long term business certainty (23.7%) and sufficient access to quota (17.6%).

Figure B. What are your key concerns for the future?



At the conference close, the vast majority of attendees thought the conference was useful (see Figure C), and that it improved their understanding of inshore fisheries (see Figure D).

Figure C. To what extent did you think this event was worthwhile?

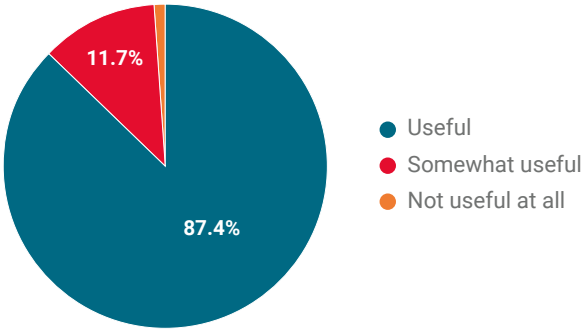
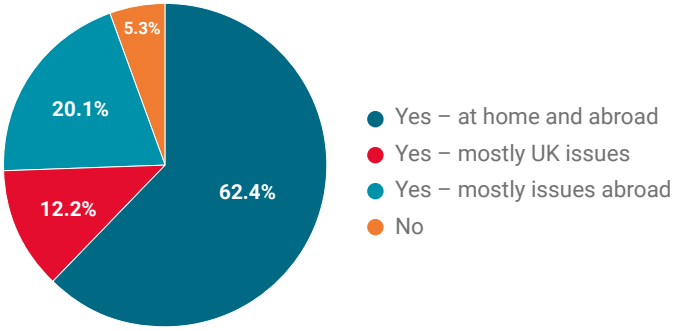


Figure D. Did the confence improve your understanding of inshore fishieries issues?



After the conference, participants were asked to complete a feedback survey – 35% of attendees, representing 61 out of approximately 175 delegates responded.

Feedback was generally positive with 80% of respondents rating the event as either very good or excellent, with 51% of respondents also stating that the event exceeded their expectations. Almost all respondents want to receive newsletters and updates. About two thirds want to be actively involved in future stages, either by participating in workshops to develop solutions (66%) or as part of pilot projects to test solutions (61%).

Reflecting the breadth of discussions at the event, when respondents were asked what the priorities should be for next steps, 70% said progressing fisheries co-management was a top priority, with improving access (55%) and enabling industry led science (54%) also deemed important priorities.

A summary of the results from the post-event feedback survey are detailed in **Appendix 1**.

Attendees at the Future of Our Inshore Fisheries Conference, 8 – 9 October 2019

Report Methods

To draft this report, notes detailing the discussions had at 18 tables at the Future of Our Inshore Fisheries Conference on 8 – 9 October 2019, were analysed and synthesised. Discussions at each table were free flowing, with participants discussing themes brought out during the speakers' presentations. Table facilitators also had a list of 'prompting' questions to guide conversation if groups stalled – these questions are in **Appendix 2**.

Key points, quotes and recurring issues were pulled out of the discussion notes and into themed discussion summaries that are reflective of the overall tone and content of all discussions from the event. From those summaries, key points were identified and laid out to guide next steps for the Future of Our Inshore Fisheries project.

For the majority of the notes supplied (although style and format varied dependent on individual scribes' preferences), report authors saw, or were otherwise able to determine, the delegate 'type' for specific remarks and/or common themes.

For example, scribes often noted 'industry participants said' or 'an NGO representative suggested'. Where relevant – for example, where there was disagreement around a table – these kinds of broad identifiers have been used within the discussion summaries.

To support the table discussions, and draw out key points wherever possible, conference attendees participated in live polling – answering questions relevant to the conference themes. Participants were sometimes asked to provide multiple answers to a question – these results were weighted such that answers submitted first were awarded a higher score than answers submitted sequentially after that. Other questions asked attendees to simply answer with a single preference.

Live polling results are presented here in the text and as figures to provide further detail on the views of conference attendees, support key points and guide next steps.

Setting the Scene

Welcome from Andrew Wallace, Fisheries Director at The Fishmongers' Company

Andrew Wallace provided welcoming remarks – thanking those present for their attendance at the 'much anticipated' and 'timely' conference, and noted the importance of these discussions to the future of the fishing industry. It was seen as 'essential' that the 'new energy and momentum' bringing together so many stakeholders in one place be capitalised upon: '[we must] work together towards a common goal of establishing a blueprint for these islands' amazingly productive and diverse fisheries. Too long the challenge has been considered too difficult.'

Wallace noted that the inshore sector is often perceived as fragmented and hoped that a more unified vision would develop across the two days of open dialogue. He underscored the importance of meeting social and environmental needs, as well as supporting the industry for an economically robust future.

He thanked speakers and the event's Steering Group, and emphasised The Fishmongers' Company's commitment to the Future of Our Inshore Fisheries initiative.

Keynote Address: The evolution of a commercial fishery

Wes Erikson

A fourth-generation fisherman from British Columbia (BC), Canada, Wes Erikson detailed the co-management journey of his local demersal fishery. He characterised fishermen as nomadic hunter-gatherers, freedom-seeking individuals, defiant and determined, and filled with instinct and imagination.

> *'Fishermen are nomadic hunter-gatherers, freedom-seeking individuals, defiant and determined, full of instinct and imagination.'*
>
> Wes Erikson, Fisherman from British Columbia

Pre-1970s, the BC fishery was open access, and there was significant uncertainty. Erikson noted that the level of uncertainty in the fishery led to short-term (two-year) business planning models, leaving fishermen with little security. Despite this, he was able to become a captain by the age of 16 and pay off his first boat in full within two years.

After 1971, licenses were introduced to the fishery, limiting the number of vessels – but fishing practices responded by becoming more efficient. Fishery managers introduced harvest control rules (HCRs), including defined fishing seasons, closed areas, and vessel size restrictions. This prompted 'lateral thinking' from fishermen – Erikson noted: 'we can work around any rule'.

Fishing efficiency continued to increase and fishery managers responded by shortening fishing seasons to protect fish stocks. By the 1980s, the halibut fishery comprised 435 vessels and was open for just six days each year. The fishery was characterised by poor quality fish, high discard rates and low prices. In 1987, an opening of the halibut fishery, scheduled months in advance, coincided with hurricane-force conditions. Given the short window for fishing, vessels put to sea regardless – many sank. The coastguard was deployed on a number of rescue missions, but lives were lost. This became a turning point in how BC fishermen thought about the management of their fishery: 'the pain of the present eclipsed the fear of the future'.

> *'The pain of the present eclipsed the fear of the future'*
>
> Wes Erikson, Fisherman from British Columbia

Having explored a range of options, fishermen decided to trial an individual quota system in the fishery, on a non-transferable basis in the first instance. A formula was agreed and work commenced on determining the management measures required. Fishermen were afraid of triggering job losses and corporate concentration of quota. Individuals worried: 'will I get a big enough share?'.

Erikson detailed how fishery management was designed to address those fears: third-party monitoring was put in place, alongside ownership caps. Quotas had to be assigned to vessels, so there could be no 'paper fishermen'. Knowing exactly how much could be caught at the beginning of each year, fishermen were able to plan in advance and they developed pre-season business plans. Erikson remarked that fishermen 'felt okay about trading some freedoms for security' and a mindset shift took place across the fishery: fishermen felt that they 'owned a piece of it'. The value of licenses increased: the market's response to the increased level of security.

In the first instance, this system was only applied to the halibut fishery – the only quota species. Discarding continued and fishermen found innovative ways to avoid taking observers on board, until an NGO case study exposing the discard levels alerted to the fishing community the need to cultivate a 'social license' to fish. To expand the co-management process beyond the halibut fishery, a commercial industry 'caucus' was held to discuss the issue – bringing together seven separate sectors – but agreement between the different actors seemed impossible. Eventually, a neutrally facilitated process was developed to support fishermen in co-designing a catch accountability system covering 100% of catch. The industry caucus determined that electronic monitoring was the best option and collaborated with a private business (Archipelago Marine) to tailor a system to their needs.

Despite this agreement at the caucus level, this decision led to new fears for individual fishermen, who were concerned about the expense and complexity of the equipment, choke species, being at a competitive disadvantage against other fishermen, and not being able to 'cap out' on all species. Crucially, the Canadian Department for Fisheries and Oceans (DFO) agreed not to use the monitoring system as an enforcement tool, other than to verify logbook data: another turning point for the BC fishermen.

A new management plan was launched: a catch share for all species, for all vessels, which included quota transfers to enable fishermen to trade quota and fish according to shifting environmental and market dynamics. Quotas allocated to each vessel cover all species mortality – whether a fish is retained or released. One standard logbook is used by all vessels, and these are then audited against video footage from the electronic monitoring system.

Wes Erikson delivers the keynote address to attendees at the Future of Our Inshore Fisheries Conference, 8-9 October 2019

Catch Share

A catch share fisheries management system allocates to individuals (or communities or associations) the secure rights to harvest a specific percentage of a fishery's total allowable catch.

Catch shares can be divided up using quota schemes, such as individual transferrable quotas (ITQs), which are allocated to specific vessels, or community owned quota that is owned by an organisation (or group of people) and relevant members are allocated access to parts of that quota.

Catch shares can also be area based like territorial use rights for fishing (TURFs) where areas are open exclusively to TURF participants.

Because catch shares give vessel owners ownership over a 'right to catch', catch shares can be traded onto different vessels. Therefore, whoever owns (or operates) the vessel that has the rights to catch can be held directly accountable for staying within their limits.

The new monitoring system brought unanticipated benefits: selectivity and cooperation amongst fishermen. Rather than keeping fishing grounds secret, fishermen began to proactively share information around occurrence of choke species in order to help other vessels keep fishing. Erikson remarked that he 'is still amazed to this day' and that the 'fishermen now occupy the moral high ground – we have a defendable fishery'.

Erikson noted that, within the management framework, all actors 'continue to make mistakes and learn' – but that the 'dynamic' system can account for this, and trusted stakeholder bodies provide advice directly to decision-makers when required. He emphasised the crucial ingredient of trust within the co-management system and the shift towards recognised, individual responsibility through implementing individual accountability. He concluded by adding that 'no part of this was easy – there was no guarantee this would work, but without it, there was a guarantee that the fishery would fail'.

In Brief: The history of inshore fisheries management in the UK

Barrie Deas, the Chief Executive of the NFFO UK, and Kirsten Milliken, Economics Project Manager at Seafish

Barrie Deas and Kirsten Milliken provided a headline summary of the recent history of inshore fisheries management in the UK, as a foundation for the day's discussions.

Deas gave an overview of how the inshore fleet has changed during his time in the industry. He noted that inshore fisheries can be very important to coastal communities but that they are also vulnerable. Deas concluded that:

- The length-based 'under-10m' dividing line is arbitrary – vessels within this category can now have vastly different catching powers, due to technological developments. The 10m dividing line was adopted under the Common Fisheries Policy (CFP) to remove the administrative burden on small-scale vessels. Work-arounds to this definition have resulted in changes to vessel design and fleet operations.
- The inshore sector has seen significant displacement from other sectors – particularly from the over 10m fleet following cod recovery in the 1990s.
- Inshore fisheries have been placed in the 'too difficult box' by government. The complex and fragmented nature of the under 10m (u10m) fleet has led to difficulties in their organisation and they lack representation.
- Inshore fishermen target many non-TAC species and there are concerns that some of these species are not harvested sustainably because of a lack of management.

Milliken introduced a research project undertaken on behalf of the Future of Our Inshore Fisheries Steering Group. The project describes the policy framework that the inshore fishing fleet have been operating under since the UK's membership of the Common Fisheries Policy (CFP) began in 1973 and how the policy landscape in the UK has influenced the development of the inshore fishing fleet. Milliken concluded that:

- The policy guiding fisheries management in the UK has been directed by the need to comply with the CFP. Until quite recently, the focus of management, including monitoring and enforcement, was on those who were thought to have the biggest impact: the larger-scale, offshore fishing vessels that could catch more.
- The u10m fleet was largely left out of early discussions and decisions about managing fishing effort because their impact was thought to be minimal, and for many years they were relatively free of many of the reporting requirements of their larger-scale counterparts.
- This division of management approaches ignores the interdependence of the two parts of the fishing fleet, particularly in terms of understanding and managing total fishing mortality.
- Managing the two fleets separately may have been well-intentioned (to remove the administrative burden on small businesses) but what the civil servants of the time failed to consider was the incentives they were creating either for the people already operating in the u10m fleet or for new people to join: they accidentally created a negative incentive for investment.
- In the early 1980s, the u10m fleet was an attractive alternative for owners of fishing businesses that were exposed to increasingly restrictive management offshore. The policy of the time inadvertently encouraged investment in the inshore sector and excess capacity shifted from offshore to inshore.
- The u10m fleet grew quite considerably until 1993, and there have since been initiatives such as licence capping and decommissioning to try and reduce the impact of the u10s.
- Alongside the growth in number of vessels, there have also been significant technological developments in fishing since the 1970s, meaning modern vessels are much more capable than their traditional counterparts, and they have a greater catching capacity.
- Future policy must be grounded in evidence and reality. There are significant evidence gaps, particularly in historic fisheries data, which makes understanding cause and effect relationships difficult. Having a strategy, knowing what you want your fishing fleet to look like, and which parts of the fleet need to be protected, helps you to decide how to get there.

How should we define inshore fisheries?

THEME SESSION ONE

CASE STUDIES SUMMARY

Defining our inshore fisheries as a first step to sustaining them

Professor Eddie Allison, Professor of Marine Affairs, University of Washington

Professor Eddie Allison spoke about his personal experiences working on inshore fisheries governance in Africa, Asia, the Pacific, the UK and the US. He noted that inshore fishing activity is difficult to define, and difficult to manage when it is lacking a clear definition.

He asserted that, in the UK there is currently no common vision among stakeholders for the future of inshore fishing – including no common definition of what 'inshore fishing' means. The length of fishing trips, vessel length and fidelity to fishing grounds are all factors to consider when shaping a definition for inshore fishing. He noted that the sector is constantly innovating, and this is not compatible with 'too tight a definition'.

He highlighted that there is a general consensus around inshore fisheries being 'integral' to coastal communities. Inshore fisheries have a number of roles and provide a range of services, including contributing a 'health and nutrition role' in supplying healthy protein and getting seafood more central in UK diets. Furthermore, inshore fishermen may play a role in stewarding the environment they fish in, and local fisheries may act as training grounds for other maritime industries.

Nearshore, local, small-scale fisheries offer the potential for high-value niche products. Allison posited the promotion of 'meroirs' – (mirroring 'terroirs' on land) seafood products that are defined by their locality and the way they are processed (e.g. Cromer crabs, Whitstable Oysters, Menai Straits mussels, Arbroath smokies, Manx kippers etc).

This approach could learn from successful terrestrial examples (the wine industry, parmesan cheese etc) and from the Oyster industry, where oysters with provenance fetch premium prices. This would capitalise on the 'locavore' and 'storied food' trends to focus on localised marketing, potentially enabling small-scale fish processing and coastal job creation to be distributed.

Allison detailed the range of lenses through which different individuals or communities may view inshore fishing – ranging from picturesque, heritage-rich emblems within the local food and tourism sphere, through to an intrusive and unwanted 'sunset industry'. He highlighted the opportunity for the inshore fleet to consider and create the image that the public has of the industry, purposefully, to avoid negative perceptions and foster a 'brand'. In this sense, exploring a definition of inshore fishing can be as much about the public image and narrative that can be created (to the benefit of fishers and their businesses), as about technical specifics.

Allison concluded by noting financial, market and institutional innovations are all required to provide a sustainable future for small-scale fishing, and to place this form of local food production 'at the heart of blue economy narratives'. He cautioned that legislation shouldn't undermine the flexibility of inshore fishermen when it comes to their operation, marketing, and development of new supply chains.

Defining our inshore fisheries: taking a species-based approach and the implications for management

Dr Ewen Bell
Senior Inshore Fisheries Adviser, Cefas

Dr Ewen Bell summarised a research project undertaken on behalf of the Future of Our Inshore Fisheries Steering Group. The aim of the research was to investigate the possibility of defining inshore fisheries on a species-based approach.

The guiding principal underpinning this research is to explore whether it is possible to approach fisheries management from a fishing mortality perspective, rather than managing vessel groups based on their characteristics. A key aim of the project was to understand which waters' species are caught in, rather than which vessels are catching them.

Cefas researchers examined a range of species and considered whether they could be classed as 'inshore' or 'offshore' species, based on the locations of catches, using official data. The species covered by the research were: halibut, cuttlefish, crab, bass, nephrops, and lobster. Conclusions for these species are briefly summarised below:

- **Halibut –** Bell noted that this species would typically be considered 'offshore' and indeed most halibut spawn in deeper waters away from the coast. However, juvenile halibut prefer inshore waters – so a map of 'take' showed that this species is affected by both inshore and offshore activity.

- **Cuttlefish** – This species spawns inshore and then moves offshore over winter. They only live for two years but have a significant ecosystem impact, as they are present in large numbers and are 'great predators'. Most landings are taken by over 10m vessels, but there are significant interactions with the inshore fleet: to manage this species, both sectors would have to be accounted for.

- **Crab –** There is a high dispersion of crab larvae, and hen crabs go on long migrations of hundreds of miles. There is significant take of this species within 12nm and within 6nm, and crabs are caught by vessels of all sizes. Again, u10m and over 10m collaboration would be required to manage take.

- **Bass** – Recreational extractions are considered to be around 30% of the take of this species. This fish is found in coastal waters in the summer, but the fishery moves offshore in winter. Both u10m and over 10m fishing activity, and the recreational sector, would need to be combined in management for this species.

- **Nephrops** – Management for this species is currently divided by ICES area, and there are 'lots of different units' around the UK, varying from entirely inside 12nm to entirely outside. The vast majority of landings are by the u10m fleet, but to fully control mortality of the species a 'bespoke solution' would be required for each ICES area

- **Lobster** – Bell commented that 'you'd really think this was an inshore species'. The research showed that, whilst the majority of landings are from the u10m fleet, there is still 'a fair chunk' of take from the over 10m fleet, including outside 12nm. Again, to control mortality, a solution would need to be found for all sectors.

Bell concluded that keeping fishing mortality within sustainable limits is 'complicated' and it is difficult to treat any sector in isolation when the evidence is reviewed. By fishing different distances from the coast, sectors effectively target different 'life stages' of species – e.g. bass juveniles remain inshore until four-to-five years of age, and then will move offshore seasonally.

It is clear that the focus needs to be on **managing fishing mortality in its entirety rather than individual sectors,** and as such, the dividing line between inshore and offshore fishing is 'entirely artificial'. However, how you manage a resource to ensure fishing mortality remains within sustainable limits, will be strongly influenced by the makeup of the industry that is fishing the resource – different management measures could be applied depending on whether a fishery is predominately further offshore or more coastal in nature.

In terms of the direction of any future management, Bell noted the long-term aims of inshore, offshore and recreational fishermen will vary significantly, and this needs to be considered, adding 'perhaps when prioritising management, key sources of mortality should be the focus'.

Attendees at the Future of Our Inshore Fisheries Conference, 8 – 9 October 2019

DISCUSSION SUMMARY

DEFINITION OF INSHORE FISHERIES

Lack of current definition: benefits and problems

There is currently no officially accepted definition of inshore fishing in the UK. A broad set of criteria for how 'inshore fisheries' are perceived and defined across the UK were discussed. The most referenced characteristic was length category, with many groups describing inshore vessels as those under 10m (u10m).

Despite a strong consensus that length category alone is not an effective definition for inshore fisheries management, it is currently used by UK fisheries administrations to manage the quota pool, accessed by many inshore fishermen.

Suggested ways to define UK inshore fisheries:

- Basic accommodation on board
- Fishermen who live in the local coastal communities
- Open boats
- Where fishing revenue feeds directly into the coastal community
- Family business
- Time spent at sea i.e. <24 hours or 'day-boats'
- Fishing with static gear
- Engine size with smaller horse power
- Length of vessel (i.e. u10m)
- Fishing for certain species (i.e. shellfish)
- Lower environmental impact
- Single owner / occupier or small number of crew
- Fishing within the 6nm limit

Participants discussed the advantages of a length-based definition. **Fisheries administrations benefit from a simple definition** – as it is easy to determine which vessel fits into which management framework.

Quota is allocated to u10m vessels non-prescriptively such that all vessels have somewhat 'equal' allocations (depending on their licence conditions) within a region's quota pool. These allocations support the flexibility of the inshore sector – a key characteristic that was noted for allowing the industry to be responsive to species availability and so remain profitable.

However, participants raised three main issues that have arisen from a length-based definition for fisheries and quota management. Interestingly, these issues are also related to other topics discussed throughout the conference, indicating participants participants felt that better defining inshore fisheries could have broad-reaching benefits for the industry.

The three main issues arising from the length-based definition are further outlined below:

1. Safety issues arise

a. The under 10m pool quota is allocated on a monthly basis, unused quota returns to the pool and cannot usually be carried over by the fisherman. Fishermen are therefore under pressure to ensure that they use their full entitlement during the calendar months so that they don't lose it. This can result in some fishermen going to sea in bad weather that they are incapable of dealing with, in order to stay profitable.

b. More vessels in a fishery means more competition for access to the seabed and fishery resources, and so fishermen may spend longer hours at sea looking to catch enough to be profitable.

2. Spatial conflict arises for several reasons

a. Due to a lack of physical separation, inshore vessels sometimes head out further from shore and so come into direct competition with larger 'offshore' vessels, which also sometimes move in closer to shore.

b. The increased number of 'super 10s' – vessels u10m but with increased capacity – means these vessels have the same access to the quota pool as traditional u10m vessels, but have a far greater 'capacity to catch'.

3. Sustainability of inshore fisheries is not wholly considered or managed

a. There is a lack of historical data for inshore fisheries, so current quota pool allocations are based on short-term observations and may not properly reflect the status of the stock.

b. People are attracted to the reduced restrictions of inshore fisheries and so certain species can be subject to increased pressure.

c. There is no differentiation or variation in restrictions imposed within the inshore sector for different types of gear, when there are clear differences in the environmental impact between some gear types (i.e. diving compared to dredging).

Future definition and how it may apply to fisheries management

Given the weaknesses of a length-based definition used by some regulators, many groups discussed whether a strict 'inshore vs offshore definition' was needed.

> *'Inshore Fisheries is such a broad term to define. It is impossible to picture clearly an inshore vessel.'*

Following on from the presentation by Dr Ewen Bell, many groups were unsure whether defining species as inshore or offshore would be practically helpful, given the species move between areas. Therefore, **regulating fishing mortality, regardless of who catches the fish, was explored** in a few discussions: i.e. fisheries managers should dictate how much each vessel is allowed to fish, with what gear and where they can go, irrelevant of the size of the vessel. While this idea was somewhat supported, attendees wanted to make sure **fairness and equity for smaller-scale vessels was properly considered**, as smaller-scale vessels could be out-competed by more powerful or larger vessels with greater capacity.

It was, however, broadly acknowledged that **fisheries managers do need clear parameters to define which vessels they are responsible for, so all fishing effort can be effectively managed**.

Groups discussed that broadly, any future definition or parameters to help guide management of inshore fisheries should:

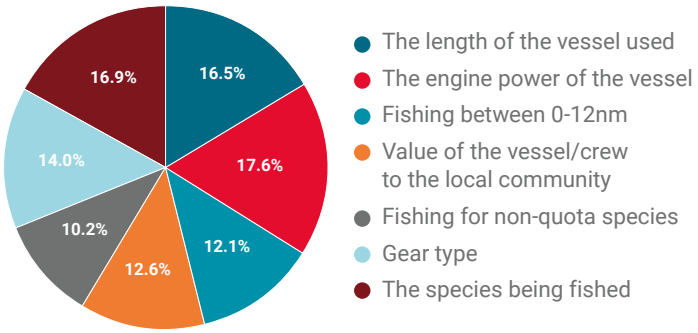
- **maintain the flexibility** that has become synonymous with inshore fisheries, and
- seek to **manage the sustainability** of fisheries, for the benefit of the environment and the future of the industry.

Groups thought a future inshore fisheries definition could be conceived at a national level, but participants noted it should be **further defined at regional levels to account for the geographical and cultural diversity** that comes when implementing inshore fisheries management locally in the UK. It was broadly agreed that any new inshore fisheries definition (or local interpretation) would be most effective if fishermen were actively involved in the development of the definition – perhaps through the advent of fisheries co-management in the UK (further discussed in 'Theme Two' of this report).

Overall, participants suggested that a future definition 'shouldn't be asking only 'who' but 'how' we should manage inshore fisheries'.

Attendees discussed how multiple factors should be considered when defining inshore fisheries. A live poll of attendees showed that when presented with various options, there was an almost equal preference for a range of factors to be used to define inshore fisheries (see Figure 1a).

Figure 1a. Inshore fisheries should be defined based on:



Attendees at the Future of Our Inshore Fisheries Conference, 8 – 9 October 2019

KEY POINTS: Defining Inshore Fisheries

- A length based **definition of inshore fisheries is not relevant or effective** in managing inshore fisheries.
  - The definition can **cause safety and sustainability risks** and was considered to **increase the likelihood of spatial conflict**.

- A **coherent definition of inshore fisheries would help regulators and managers** to more effectively manage inshore fisheries.

- Any plans to define inshore fisheries **should consider all sources of fishing mortality and take account of the broader UK fisheries** management context.

- A new definition **should support the flexibility of the inshore fishing industry, whilst seeking to manage the sustainability of fish stocks and the industry** itself.

- A new definition should consider **'how' to manage inshore fisheries**, and not be only concerned with 'who' to manage.
  - Perhaps this would include some instance of species-specific fisheries management.

- To determine 'who' is managed, **one option discussed was that inshore fisheries vessels could be assessed against a national matrix of criteria** into a 'multi-tiered' vessel classification system.

- To determine 'how' inshore fisheries are managed, **local fisheries management organisations could use these classifications** to design and implement a series of fisheries management restrictions (when, where, for what and using which gear) for each vessel classification.

- **Recreational fishermen could be included** in this new 'tiered management' system.

How to successfully deliver co-management in inshore fisheries

THEME SESSION TWO

CASE STUDIES SUMMARY

Lessons from international experiences in fisheries self-governance

Dr. Ralph Townsend, Director of the Institute of Social and Economic Research, University of Alaska, USA

Dr Townsend drew on experiences from the US, Canada, Australia and New Zealand to reflect on what makes 'self-governance' in fisheries possible. In an *FAO Technical Paper* authored by Townsend – 'Case Studies in Fisheries Self-Governance' – the term is defined as: 'the delegation of important aspects of management decision-making responsibility to the domain of fishing industry participants: i.e. self-governance is about the fishery participants themselves making governance decisions'.[1] The key ingredients he identified are listed in brief below:

Which factors help make self-governance possible?

- A closed, clearly defined group of stakeholders involved in negotiations.
- More clearly defined rights for fishing stakeholders – allowing a secure base to work from.
- Small numbers and 'homogenous self-interests' – i.e. small groups with clearly shared goals.
- Decision-making structures that allow for 'non-unanimous consent' – rules that allow less than everyone to consent to an action, such as voting mechanisms. This can prevent a stalemate in negotiations.
- Predictable biological systems – i.e. sufficient data to make long-term decisions, rather than aiming for short immediate payoffs.
- Ability to use spatial allocation tools.
- Efficient enforcement mechanisms.
- Contracts – many effective self-governance examples are contracts between groups of stakeholders. This provides a secure legal basis to work from.
- Learning from other successful case studies.

What is government's role in facilitating self-governance?

- Government must recognise that economics matters as well as biology. People need to make a living.
- Industry self-governance requires a willingness to shift authority from government. Government also needs to support this shift to help enable co-management, particularly when industry groups initiating the process may still be finding their feet.
- A willingness to enforce the decisions that result from self-governance.
- Government can establish non-unanimous decision-making rules to help industry make some decisions. For example, if government allows industry to contract a third party for a service (such as dockside monitoring), the government could say that an industry association can enter into an agreement that binds all permit holders, if a majority of permit holders approve.
- Flexibility and incremental devolution. Self-governance can't be delivered immediately on an 'all or nothing' basis. Rather, it needs a 'section by section' approach to work.
- Tolerance for mistakes. Government must avoid the temptation of saying 'you made a mistake, self-governance is done'.

1. www.fao.org/3/a1497e/a1497e02.pdf (Townsend, R.; Shotton, R.; Uchida, H. (eds). Case studies in fisheries self-governance.FAO Fisheries Technical Paper. No. 504. Rome, FAO. 2008. 451p.

IFCAs and co-management: what might need to change?

Robert Clark, Chief Executive Officer, Southern Inshore Fisheries and Conservation Authority

Robert Clark provided a break down on the role of IFCAs in fishery management and detailed an example of successful fishery co-management where a local IFCA played a central role.

IFCAs are committees formed of elected representatives from coastal communities and others appointed by the MMO for their skills or knowledge of the marine environment. They can provide a local framework through which to make co-management decisions. With that noted, Clark highlighted that the potential for co-management to take root at any time depends on the existing policy and legal environment, national support, and the capacity of the stakeholders involved.

Clark presented a case study on the Poole Harbour clam and cockle fishery as an example of co-management in the South of England. In the 2000s, a novel fishery for manila clams (a non-native shellfish species) began in Poole Harbour. Poorly regulated fishing activity led to a need for new management measures to protect fishing livelihoods and the environment. As a result, the local IFCA took an approach of sharing the responsibility with local fishermen to find the best way to make money from this new commercial stock, whilst collaborating with NGOs to conserve nature.

The process took into account the safety issues arising from illegal fishing and from submerged pottery waste posing a risk to health and introduced new closed areas to address these risks. Simultaneously, to counter-balance the new closures, previously closed areas were re-opened through discussion and joint decision-making with fishermen.

Over 50 participants in the fishery worked collaboratively to develop proposals, which were then put to the IFCA. The fishery is now subject to official catch reporting meaning data is gathered and fed back into management, creating a flexible and adaptive approach. A clearly defined area for the fishery and the management measures helps ensure participation and appropriateness of measures – Clark identified 'scale' as a crucial element in good co-management.

DISCUSSION SUMMARY

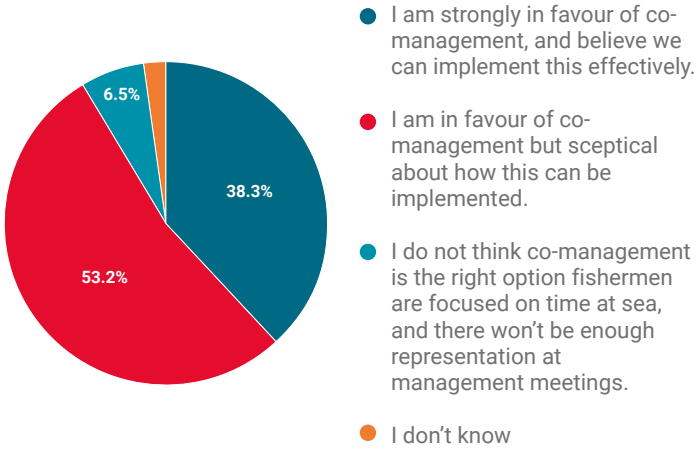
CO-MANAGEMENT

General perceptions & understanding of co-management

Across the conference, there was a **positive response to the concept of co-management**. Co-management appears to be universally seen as central to the vision of sustainable, thriving inshore fisheries. With that noted, some participants were **unfamiliar with the term 'co-management'**, and those individuals voiced doubts about a co-management framework. These individuals, predominantly from the fishing industry, often expressed a personal **desire to see fishermen more engaged in shaping fisheries management rules** unknowingly defining co-management without having previously heard the term. This suggests there may be some need to further populate and familiarise the term across the industry, should this method of management be pursued.

The majority of participants were in favour of co-management: 38.3%% stated they were in favour of co-management and thought it could be implemented effectively, while 53.2% were in favour of co-management but had reservations about how to implement it (see Figure 2a).

Figure 2a. What do you think about co-management?



The current knowledge and understanding of co-management, and level of engagement between industry and authorities, varies significantly by region – as do definitions of the term. For example, some participants saw Producer Organisations (POs) as co-management structures, whereas some participants identifying themselves as PO members considered themselves never to have participated in any form of collaborative fisheries management.

Groups discussed the difference between 'genuine co-management' and various forms of 'consultative co-management'. Many fishermen said there is a **significant lack of trust between fishing communities and authorities**, and so thought 'genuine co-management' would therefore not be possible. It was suggested by a number of groups that government is sometimes reluctant to consult fishermen from the outset – asking for views once decisions have already been taken, rather than genuinely inviting fishermen to be involved in the design of management systems.

Moving swiftly from the current situation to all-encompassing 'genuine co-management' will not be a single-stage process, based on the experiences outlined in the presentations, suggesting a step-change or iterative evolution is more likely. As such, 'consultative co-management' where the government genuinely seeks input from industry and then updates management rules based on that input, was seen by some participants as a good step forward towards the ultimate goal of genuine co-management.

Lack of trust between fisheries stakeholders

As these views about government would suggest, commentary around a lack of trust was a pervasive theme during co-management discussions. **Trust between industry and authorities is strikingly lacking**. Building trust was described as a 'crucial first step' towards co-management. Fishermen commonly said regulators are:

- making and enforcing rules based on false assumptions;
- communicating rationale poorly, and;
- very difficult to contact.

A number of fishermen outlined scenarios where they had reached-out to authorities and had not received any reciprocal contact, and several groups highlighted experiences where submissions to government consultations had not received a response. Such incidents led to scepticism about whether the decision-making system (or the broader political system) as a whole would be ready to adapt to a collaborative and inclusive approach to management, based on mutual compromise. **Significant communication barriers need to be overcome**.

> *'There is a distrust between fishermen and regulators. Fishermen feel as though management is out to finish them and they want to guarantee that this isn't the case.'*

From the other perspective, some non-fishing participants felt **fishermen do not want to take time to be fully engaged in co-management**: even if opportunities to do so were offered. These attendees believed the inshore fishing industry would not be able to dedicate sufficient time to the process to produce a workable system.

A comment from one discussion group highlighted that **there may be a 'cultural' barrier to achieving co-management**: it has never been ingrained in the fabric of UK policy and decision-making, and would represent a fundamental change in approach from all involved. This was further summarised by another group as 'there's a long way to go', which aptly encapsulated the overall conference view.

Funding to support industry attendance at meetings

A lack of 'psychological energy' was also noted by a number of participants. Some participants asserted that fishermen feel 'ground down' by negative perceptions of the industry, the trials of the job, and concerns for the future. On top of this, **financial pressures mean many fishermen can't afford to take time away from fishing to contribute to meetings**: an essential aspect of co-management. Financial assistance to encourage participation in co-management was seen as a potential solution. One group suggested the development of an 'engagement fund' that interested fishermen could apply to.

Attendees at the Future of Our Inshore Fisheries Conference, 8 – 9 October 2019

Components of strong co-management

Participants broadly agreed a desirable, strong co-management system should:

- be based on **fairness**;
- build mutual **trust** between all actors involved;
- be founded on strong, **transparent communication,** and;
- **deliver co-management on a local scale, within an overarching framework**.

Improved communication was highlighted as fundamental to tackling the trust issues identified by participants. **Communication is also vital in ensuring co-management can flex and adapt promptly to changing conditions**. Improving communication as soon as possible was therefore highlighted as a priority and generally agreed by participants as the 'first step' towards co-management.

> *'If fishermen thought showing up would make a shred a difference, they would show up.'*

It was broadly agreed that **co-management should take place at a regional level**, to account for differences between regions. It was felt that regional tailoring would help secure appropriate, and flexible management measures. However, many attendees also emphasised the need for a **clear, overarching framework with 'clear objectives and a clear end destination' to guide local co-management approaches'**. Furthermore, several groups suggested both the overarching objectives (nationally) and local objectives (at the regional co-management structure level) would need to secure buy-in from all parties involved, to ensure willingness for different stakeholders to work together to reach the 'end destination'.

Attaining foundational agreement from all parties was seen as challenging, particularly given the diversity of UK fisheries and the wide range of issues at stake. Groups discussed the value of neutral facilitation in this context, some participants suggested **any form of true co-management would be 'a two-way learning process for both fishermen and the authorities'**, which requires a neutral presence to ensure all views are heard and addressed.

Some examples of co-management, or collaborative structures, around the UK were highlighted, including the fisheries and conservation reserve in Lyme Bay – where a committee of diverse stakeholders, including researchers and the local IFCA, is facilitated by the BLUE Marine Foundation to develop joint proposals for management. Others with experience of co-management outside the UK commented on the value of joint NGO-industry proposals as a way to spur government into collaborative discussions.

Many participants thought the roots of co-management are already embedded in the industry, but in an ad-hoc way often exemplified by intra-industry agreements. Collaborative conservation measures developed between UK fishermen and fishermen from other nations were discussed as evidence of the ability of the industry to negotiate and compromise, when conditions are right.

Given the diversity of fisheries and fishing issues, the option for issue-specific committees within co-management bodies was raised. In this context the Scottish White Fish Producers Association (SWFPA) was cited as an example, as they have a number of bodies covering, for example, gear selectivity, shellfish etc.

Use of data within co-management

A range of attendees commented on the importance of having a 'clear view of the landscape you're operating in'. Although picked up in more detail during the industry-led science session of the conference (see Theme 6), in the context of co-management, most groups thought improving the availability of data would provide:

- a more secure basis for inshore fisheries management.
- integral information to design a sustainable and fair management system.
- another element to help build trust between fishermen and regulators.

The ownership and use of data was a key point that arose in the context of discussions around weak foundations of trust between fishermen and management authorities. While fishermen saw increased data collection as vital to give all involved in the fishery a better sense of the health of stocks, they also feared enhanced monitoring could be used for more stringent, punitive control.

Benefits to fishermen from collecting data

An example of better data collection in Weymouth was cited. Through an agreement between the local IFCA and fishermen, more effort data was gathered, meaning the IFCA could make proactive decisions about seasonal closures to protect stocks, leading to increased financial returns for fishermen. The collaborative nature of the process meant fishermen felt they had 'bought in' to the measures and saw that their data led to improvements in the fishery and greater financial rewards.

Another fisherman relayed his positive experience supporting scientific data collection. Incentives such as being allowed to retain extra catch during scientific monitoring trips, and being paid for extra time at sea, meant he felt invested in continuing the work and had developed good relationships with government scientists.

Within the context of co-management, fishermen strongly agreed they would want to see the results and outcomes of any extra research carried out and have this clearly communicated to them.

> *'It is important to know the status of the stock in a co-managed fishery before commencing management measures; if a balance in stock is not maintained it can have an adverse effect on neighbouring fisheries.'*

Co-management as part of career progression

While not discussed by all groups, a number of attendees felt **well-functioning co-management structures would boost the professional image of the fishing industry**, helping to attract quality new entrants. Engagement with co-management committees or negotiations offers an additional skill set, or route of progression, for those considering fishing as a career, and this self-advocacy may help cultivate a more positive image for fishermen.

Beyond this, a number of fishermen thought better industry involvement in management would provide scope for familial and social issues for fishing communities to be 'baked in' to management and future planning. Groups mostly raised issues regarding the safety, security and flexibility of fishing management regulations. In this sense, **co-management could allow fishermen to build careers that are sustainable 'in the round'**, because fishermen could have a say in how their 'home lives' are impacted by certain management decisions (i.e. closures or openings that create particularly unsocial or safe working hours). **Co-management could therefore help address some key welfare issues associated with the industry**, and so make inshore fishing careers more sustainable in the longer term for more people.

Challenges with regulatory agencies

Groups suggested that **IFCAs are largely seen as dysfunctional and not modelled on co-management objectives**. IFCAs demonstrate varying levels of engagement with the industry across England, but were generally considered, by fishermen, to be dominated by voices and individuals who don't fully understand the needs of fishing communities.

> *'IFCAs are dominated by environmental outcomes and councillors, who don't understand fishing and the marine environment.*

> *'IFCAs have become a management and enforcement tool rather than an enabling tool.'*

There was less clarity on how enforcement and sanctions would work under a co-management system. In general, participants across the board felt sanctions are applied inconsistently in different regions, severe penalties (such as the removal of a fishing license) are infrequently used. Whether local co-management could effectively enforce regulations was discussed, and a more comprehensive discussion about how inshore fishermen comply with regulations was covered later in the conference (see Theme 5).

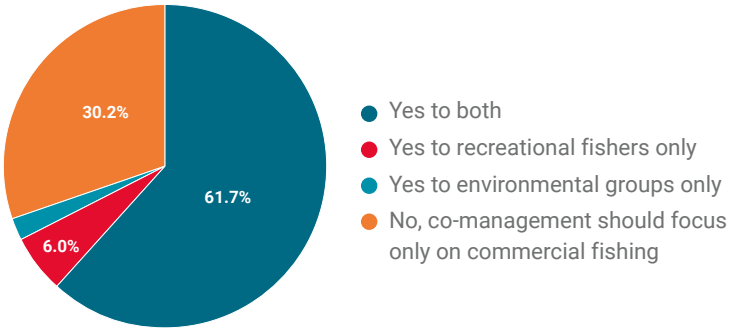
Several groups suggested that fishermen policing themselves would be ideal – but how to attain this was not discussed. Several participants were clear in their belief that co-management could be crucial as **fishermen cannot fully 'self-govern' and local management bodies would need to retain overriding authority to determine rules and intervene**.

Fishermen had concerns about voluntary agreements, as a single irresponsible individual could put the sustainability of a whole fishery at risk by acting outside of (voluntary or statutory) rules. Fishermen do not want to be disadvantaged by competing with less responsible operators. In this context, a number of groups discussed that 'both carrot and stick' would be needed to make co-management work effectively – i.e. **strong incentives to engage should be coupled with strong disincentives to act unsustainably**.

Linked to this, and the fear of a fishery becoming unsustainable due to irresponsible practice or outside influences, several delegates emphasised the importance of understanding the total number of players within a fishery. **Nomadic fishing practises were seen as a challenge to local co-management and sustainability**, representing an unpredictable factor in cultivating local stocks.

While not explicitly discussed across all tables, live polling indicated a strong preference for recreational fishermen and environmental stakeholders to be involved in co-management (see Figure 2b), although 30.2% of attendees thought co-management groups should only include commercial fishermen.

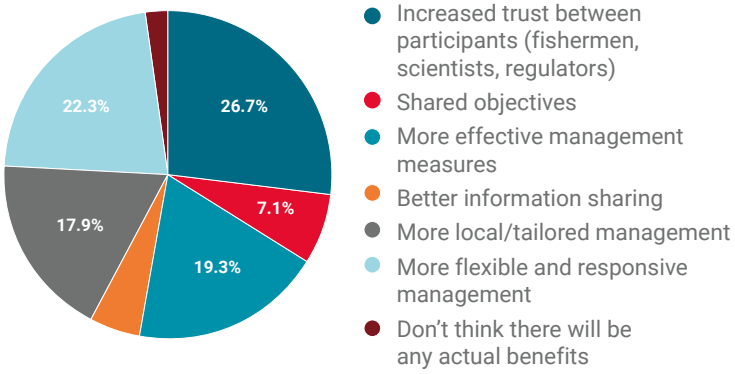
Figure 2b. Should co-management include recreational fishers and environmental stakeholders?



Next steps: towards co-management

Participants broadly agreed there are multiple benefits to co-management. Increased trust (26.7%), more flexible management (22.3%) and more effective management measures (19.3%) were the top three most anticipated benefits of co-management.

Figure 2c. What needs to change to allow co-management to work effectively in the UK?



KEY POINTS: Co-Management

- There was an **overwhelming consensus that the future of inshore fisheries** (and fisheries more broadly) **should be determined through, and delivered by, co-management**.
- **Co-management will require a fundamental shift in trust, understanding and communication** between fishermen and regulators.
- **There was desire for an over-arching, national framework for co-management**, that will grant appropriate flexibility and decision-making powers to small, local or regional groups – for management measures to be developed and implemented with appropriate local understanding and sensitivity.
- **Co-management groups should comprise of a wide range of stakeholders,** including recreational fishermen and NGO representatives, and **must be open to and support the attendance of active fishermen.**
- **Financial assistance –** perhaps in the format of an 'engagement fund' **– may be necessary to increase input from inshore fishermen** and could be a meaningful way for government to support the process**.**
- Co-design of management **measures should help to address social, welfare, economic and environmental issues** as well as improve compliance. Fishermen's knowledge can lead to the design of systems that support fishing as a career in the round and therefore strengthen coastal communities.
- **Offering fishermen opportunities to become advocates and experts in management** may help boost the image of the industry and support **a pipeline of quality new entrants** into the inshore sector.

Spatial conflict & how to avoid it

THEME SESSION THREE

CASE STUDIES SUMMARY

Spatial conflict – global solutions and UK issues

Dr Rob Blythe-Skyrme, Managing Director, Ichthys Marine Ecological Consulting

Dr Rob Blythe-Skyrme detailed a research project undertaken on behalf of the Future of Our Inshore Fisheries Steering Group looking at different types of spatial conflict, how this conflict arises and possible methods for mitigation. The research focused on four types of conflict, listed below:

- Inshore vs. offshore conflict,
- Conflict between different gear types,
- Conflict between full-time vs. part-time fishing activity,
- Commercial fishing vs. recreational fishing conflict.

Blythe-Skyrme detailed how spatial conflict can be seen as a 'wicked problem' – 'heinously complex' and inter-connected with other problems that are challenging to solve. As a wicked problem, each type of conflict nestled under the overarching term of 'spatial conflict' is unique and requires a different solution. Solutions identified for conflict are unlikely to be 'right or wrong' but rather may be 'better or worse'. Given this, where conflict occurs, Blythe-Skyrme highlighted the importance of reducing tensions between what stakeholders perceive needs to be done, and what can actually be done in reality. He underscored that regulators need to create a shared understanding of the problem and its context, and suggested they should:

- Take steps to ensure that stakeholders in the conflict understand each other's problems well enough to have an informed dialogue about the situation.
- Be clear on the role of participants within discussions.
- Create shared commitments to finding sustainable solutions.
- Understand not everyone can get everything they want.
- Foster a 'willingness to keep working'.

Blythe-Skyrme asserted that central to these goals for regulators are two factors: information and communication, adding that it is difficult or impossible to avoid conflict if fishing (and other) activities aren't fully understood. Given the need for clarity, he also emphasised that improved effort and catch data, as well as spatial data, is needed. In parallel, managers and decision makers need to understand how to engage with industry, and vice-versa, to facilitate clear communication of the issues at play and their potential solutions.

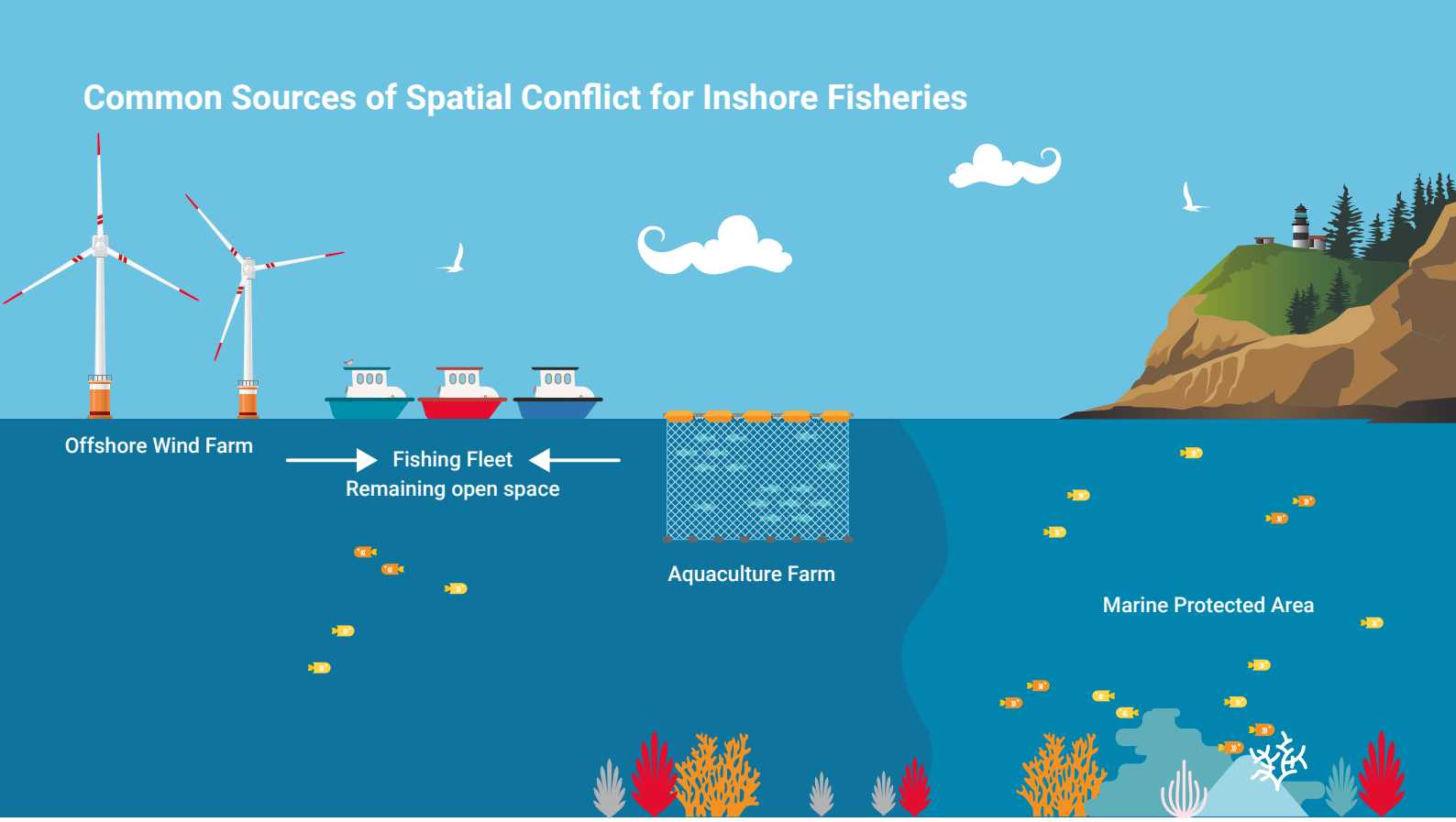
DISCUSSION SUMMARY

SPATIAL CONFLICT

What are spatial conflicts?

Participants highlighted that competition is part of being a fisher, because accessing a common, public resource inherently requires competition between parties. Various group discussions reflected that good communication and community comradery in some areas of the UK are effective in reducing the instances of competition turning into conflict. Still, spatial conflict is considered a major issue for inshore fishermen. In some areas, fishermen reported being told by other fishermen 'you shouldn't be fishing here', citing a lack of coherent definition of inshore fisheries leading to this eventuality.

By nature of the discussions, it appears that **spatial conflicts are situations that arise from 'having too many fishermen in one place'.**



What leads to spatial conflict?

Common sources of spatial conflict were listed by groups and were viewed with different levels of discontent by the inshore fishing industry. For example, **activities that displace fish stocks** (i.e. shellfish aquaculture farms) **were generally viewed as less 'harmful' than activities that cause damage to the environment or increased fish mortality** (i.e. disturbance from windfarms and their construction or higher-impact fishing methods).

The key factors discussed that increase the instance of high fishing-density and lead to spatial conflict, are explored below.

Conflict with conservation aims and MPAs

It was clear that fishermen generally were concerned with their **perceived lack of influence** when negotiating for access with conservation or environmental organisations. A repeated example given were instances where fishermen were no longer allowed to fish in Marine Protected Areas (MPAs), but the reasons for exclusion were **not communicated effectively** to the fishermen. As a result of this historically poor communication, fishermen feel their interests are often secondary to environmental priorities.

Fishermen strongly disagreed with any suggestion that they do not care about the environment or sustainability of fish stocks – their livelihoods depend on the future availability of fish stocks and they understand that fisheries management decisions need to be made to protect stocks. Some fishermen recognised the 'spill-over' benefit of having 'no-take' areas, as these arrangements could allow species to spawn or recover stocks. Other fishermen were concerned closures are not renegotiated when areas or species have recovered – and suggested there is a cumulative effect of having access to an ever-decreasing area in which to fish.

> *'We can't fish in MPAs, but there is no evidence that our passive gears have any impact but they don't want any fishing there. If there is evidence, why isn't this communicated to fishermen?'*

Many participants, including some fishermen think there is a **lack of information about inshore stocks, the environmental impact of some gear types, and seabed topography**. As a result, fishermen are sceptical whether conservation measures are 'evidence-based'. This perception indicates a lack of communication between scientists, regulating authorities and fishermen, which underpinned much of the discontent noted during the discussion session.

Conflict with other marine users: aquaculture or renewable energy

Fishermen had mixed views about aquaculture farms in inshore areas. The source of discontent was usually because **fishermen felt they are not sufficiently consulted** before farms are built, meaning they can encroach on fishing grounds or vessel routes and displace fishing effort. Others thought farms are fine, as they can provide habitat for juvenile fish and shellfish, which inshore fishermen benefit from.

While aquaculture can displace fishermen – concentrating fishing effort elsewhere – there seemed to be less discontent linked to this industry compared to the renewable energy industry. Furthermore, in one example discussed, the oil and gas industry were cited to have a better working relationship with fishermen (particularly through the NFFO) compared to the renewable energy sector. It was suggested that the oil and gas industry 'have to manage their public relations and so make more of an effort with other marine users', while renewable energy operators believe they have the 'higher moral ground' so may care less about their impact on fishing activity.

Some participants felt a **lack of appropriate representation**, relative to other industries, meaning fishermen are 'pushed out of the marine planning processes'.

Conflict with other fishermen

Spatial conflict with other fishermen was the **most intensely discussed topic as it is both a cause of spatial conflict itself** (i.e. fishing for a common resource is competitive by nature, and can be interpreted by some as conflict) **and the consequence of other types of conflict** (i.e. when fishermen are displaced by other marine activities).

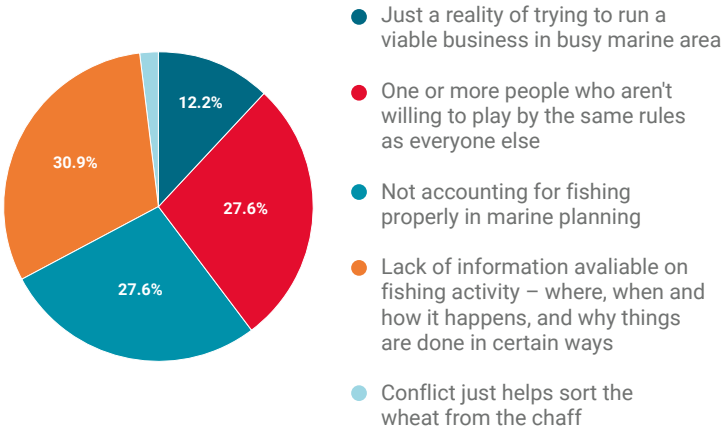
The nature of discussions suggested participants were aware inshore fishermen have an impact on each other, and some also acknowledged the impact inshore fishermen can have on recreational and offshore fishermen. Extensive examples of fisher-on-fisher spatial conflicts and their perceived consequences on inshore fishermen were raised by attendees – these are detailed in **Table 3.1** on the following page.

Other Fishermen in the Conflict	Description of Conflict	Consequence of Conflict on Inshore Fishermen
Recreational Fishermen	Recreational fishermen access the same stocks and species as inshore fishermen but are not subject to regulation. If this results in a perceived greater competition for the resource, commercial fishermen may deploy more gear.	**Environmental**: Overfishing of stocks. **Gear Interactions**: Loss of gear by commercial fishermen due to recreational fishermen's gear interacting with that of commercial fishermen. **Profit Loss:** Lower catch per unit effort for commercial fishermen.
Recreational Fishermen	Recreational fishermen discard fish, as they are not subject to the Landing Obligation. This could lead to reduced stock available for commercial fishermen and may attract predatory marine mammals which can also add pressure to the stocks.	**Environmental**: Overfishing of stocks. **Environmental**: Interactions with marine mammals. **Reputational Damage**: The public may think commercial fishermen are being 'irresponsible' and discarding the fish.
Other Fishermen (Inshore)	Fishermen are reluctant to share their 'fishing spots' – as there is a degree of commercial sensitivity, and sometimes this means gear is broken or pulled up accidentally.	**Gear interactions**: Loss of gear. **Profit Loss**: Fishermen must replace gear and perhaps find new grounds if they feel their 'competitive edge' has been lost.
Other Fishermen (Inshore)	Fewer restrictions on non-quota species has led to an increase in the amount of gear operated by individual vessels.	**Profit Loss**: More gear taking up space on the seabed results in lower catch per unit of effort for everyone. **Gear Interactions:** More gear in an area means a higher chance of gear interacting and being damaged. **Environmental**: Overfishing of certain areas and stocks, and increased environmental impacts of fishing.
Other Fishermen (Offshore)	Trawlers can tow static gear accidentally if they do not know it is there.	**Gear Interactions**: Loss of gear. **Profit Loss**: Fishermen must replace gear.
Other Fishermen (Offshore)	Trawlers can tow static gear intentionally to cause financial harm to other fishermen. Fishermen intentionally cut lines or nets of vessels.	**Gear Interactions**: Loss of gear (static, lines and nets) **Profit Loss**: Fishermen must replace gear and potentially move to new grounds to reduce future instance of conflict. **Reputational Damage**: The public perceives fishermen as 'criminals' and fishermen lose the social license to fish.

Table 3.1 Examples of Fisher-on-Fisher Spatial Conflicts and Their Consequences for Inshore Fishermen.

Participants were most concerned about fisher-on-fisher conflict, 30.9% thought a lack of information about fishing activity caused spatial conflict while 27.6% of attendees thought fishermen 'not playing by the same rules as everyone else' caused spatial conflict (see Figure 3a).

Figure 3a: What do you think is the biggest cause of spatial conflict?



What are the consequences of spatial conflict?

To determine how best to reduce spatial conflict for inshore fishermen, the key consequences of spatial conflict must be considered.

As alluded to in **Table 3.1**, four key consequences of spatial conflict (from an inshore perspective) were made clear at the meeting:

1. Environmental – Increased pressure on fish stocks and damage to fishing grounds.

2. Gear Interactions – Loss of static gear and damage to mobile gear (intentionally or accidentally).

3. Profit Loss – From replacing or repairing gear, overcrowding of 'good fishing spots'.

4. Reputational Damage – If the public perceives fishermen actions to be anti-environmental or criminal.

Groups generally agreed that **poor management of inshore fisheries where there had been a lack of communication lead to increased examples of spatial conflict.** For example, if fishers are consulted before area or time-based closures are implemented, they can advise managers to what extent the closures may create a conflict.

Therefore, to be more effective in reducing spatial conflict, fisheries management decisions should include **better consultation with the inshore industry and should consider these four key consequences of spatial conflicts**.

Benefits of multiple marine users

Avoiding spatial conflict is an important issue for inshore fishermen who accept competition is part of their job, but generally want (1) fair access to fishing stocks (and fishing grounds) and (2) sustainable management of the environment and fishing stocks. Therefore, **a future where fishermen and other marine users can co-exist is preferential**, and many participants noted this could perhaps only be achieved in fisheries that are actively managed by regulations, rather than in fisheries where voluntary codes managed spatial issues.

Some UK examples where multiple marine users have provided tangible benefits to the fishing industry were also raised.

- **Aquaculture**: Can provide a good habitat for juvenile stocks. While fishermen expressed support for some new farms, they would like to be involved in consultation during the planning process to ensure spawning sites and popular vessel routes are avoided.
- **'Fishing in Tandem'**: There are some instances when fishermen get a better catch when working in tandem with other vessels and gear types. Using dredgers behind trawlers can improve catch of some species, or 'fishing between gear ends' can increase catch of other species. This collaboration was only reported from communities where communication is good across the whole fishing sector.
- **Improvements to Infrastructure:** Other marine users can improve infrastructure used by inshore fishermen. An example cited was the installation of a Wave Hub off Hayle in Cornwall involved improvement of harbour facilities, so the fishermen lost access to some fishing grounds but gained much better facilities.

What could be changed in fisheries management to address spatial conflict?

Working to **reduce the consequences of spatial conflict is essential to future certainty for the inshore fishing** industry. Some groups discussed whether it was the government's place to try and regulate spatial conflict, but most agreed that **fisheries management could help minimise the occurrence and consequences of spatial conflict**.

A range of proposed solutions were presented across discussions at the conference, and the **key ideas and specific actions to address the consequences** are discussed below.

Fisheries management: spatial and temporal separation of sectors

Some groups thought **a new, coherent definition of inshore fisheries** will help to resolve spatial conflict issues particularly if a new definition introduces spatial and/or temporal separation of vessels and specific gear types.

Limiting gear access at certain times could reduce instances of gear interactions. For example, a voluntary agreement in South West England limits trawling for part of the year, and due to its success is now a license condition in the fishery.

Spatial separation including implementation of 'gear specific zones', can reduce gear interactions between different types. These arrangements would need to be carefully managed to ensure fishing grounds or stocks are not damaged by overuse.

This type of detailed marine spatial planning was likened to zoned areas in terrestrial agricultural and environmental planning, implementing a similar approach in UK inshore waters was supported by some fishermen.

> *'There are town plans and plans for agriculture where there are set aside areas. Why not for fishing?'*

Tracking/cameras

The implementation of vessel tracking using inshore Vessel Monitoring Systems (iVMS) was widely discussed. The MMO are planning to implement iVMS on all English vessels smaller than 12 metres by 2021. Some participants raised concerns about the cost of iVMS suggesting that the government initiative should be subsidised. Some fishermen thought they should use iVMS as a way to negotiate with regulators stating things like – 'I'll support the use of cameras if inshore fishermen were given additional quota.'

Many fishermen thought iVMS could be advantageous for their business, because tracking your location can:

- **Prove 'you are doing the right thing'** – because tracking can show you are not in MPAs, or in areas where gear or environmental damage has occurred
  - Alternatively, iVMS can be used to prosecute people who are operating in areas they should not be.
- **Collect data to inform decisions**, including:
  - Evidence of historical fishing grounds in case it is needed for spatial or temporal access rights, or
  - During consultation with renewable energy companies when negotiating future sites.
- **Improve safety at sea** by using VMS to locate vessels that get into difficulty and rescue crew.

> *'Industry are accepting technology like VMS to provide spatial evidence of fishing activity.'*

A positive example from Wales was discussed, where to get a scallop permit, iVMS is required on all vessels. The **tracking helps to support spatial management but since implementation there has also been a reduction in interaction with static gear**.

There is a strong link between spatial conflict and encouraging compliance, which was discussed in greater detail later in the conference (and in Theme Four of this report).

Use of CCTV cameras to monitor behaviour and verify catch were also discussed. These could provide evidence of compliance or could be used to provide evidence for prosecuting illegal activities.

Gear technology improvements

Innovative gear technology was raised as a way to reduce accidental spatial conflict. For example, participants thought that if technology emerges (or becomes readily available) so gear can be tagged to alert vessels to static gear, fishermen would be able to more easily navigate to avoid these conflicts.

'Ultimately gear conflict works both ways, it ruins the trawler's day as well, not just the static guy whose gear is damaged.'

Better communication

Concerns about spatial conflict generally came after **instances of poor communication.**

It was agreed that improved communication between fishermen drastically reduces instances of fisher-on-fisher spatial conflict. In some areas of the UK informal or 'gentlemen's agreements' exist to ensure fishermen do not accidentally damage each other's gear or fishing grounds. Examples of these arrangements include fishermen telling (or radioing) each other where they are headed or where they have deployed gear, while others reported instances of trawlers returning static gear that had accidentally been pulled up.

'You only solve the problem by talking to people; visiting [non-local] vessels in particular don't see the damage they've done if they move on.'

This cooperation is not common across all areas of the UK and tends to degrade when recreational fishing is prolific or nomadic vessels enter an area. It was suggested that more formal measures could be more effective than voluntary agreements in these instances.

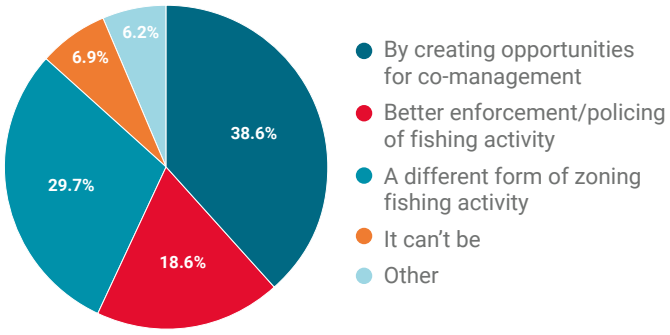
Better communication, through improved fisher representation, meaningful consultation and co-management could also decrease the instances and consequences of spatial conflict with other marine users (i.e. conservation planners, aquaculture farms and the renewable energy sector).

More broadly communicating the consequences of spatial conflict (especially if it lead to compliance outcomes or prosecutions) was considered a strong way to reduce instance of spatial conflict.

Next steps

Most participants (93.1%) agreed that spatial conflict could be avoided. Of the options suggested, 38.6% thought creating co-management would help avoid spatial conflict, and 29.7% thought implementing fishing zones would reduce spatial conflict.

Figure 3b: How might spatial conflict be avoided?



Specific actions to reduce the instances and consequences of spatial conflict were varied, and discussed thoroughly at tables. Some specific actions to reduce the consequences of spatial conflict include:

1. **Limiting gear access at certain times**

2. **Implementing spatial separation** including implementation of 'gear specific zones'

3. **Requiring iVMS to track fishermen location and use this for spatial planning**

4. **Implement innovative gear technology** to reduce accidental spatial conflict

5. **Improve communication** between fishermen to reduce the instance of fisher-on-fisher spatial conflict.

Attendees at the Future of Our Inshore Fisheries Conference, 8 – 9 October 2019

However, taking it a step further, it was thought that some actions can have a larger impact than others – if combining 'types' of actions into a singular action can be more effective at reducing spatial conflict consequences. i.e. to most effectively reduce spatial conflict:

1. Striving for **better communication** amidst the **increased use of tracking technology**, it was clear that telling other fishermen where you were going can be encouraged if ***all fishermen are using the technology***.

2. Striving for **better communication** and **more effective fisheries management decisions**, the industry and fisheries regulators need to ***talk more about specific fisheries management ideas and decisions***.

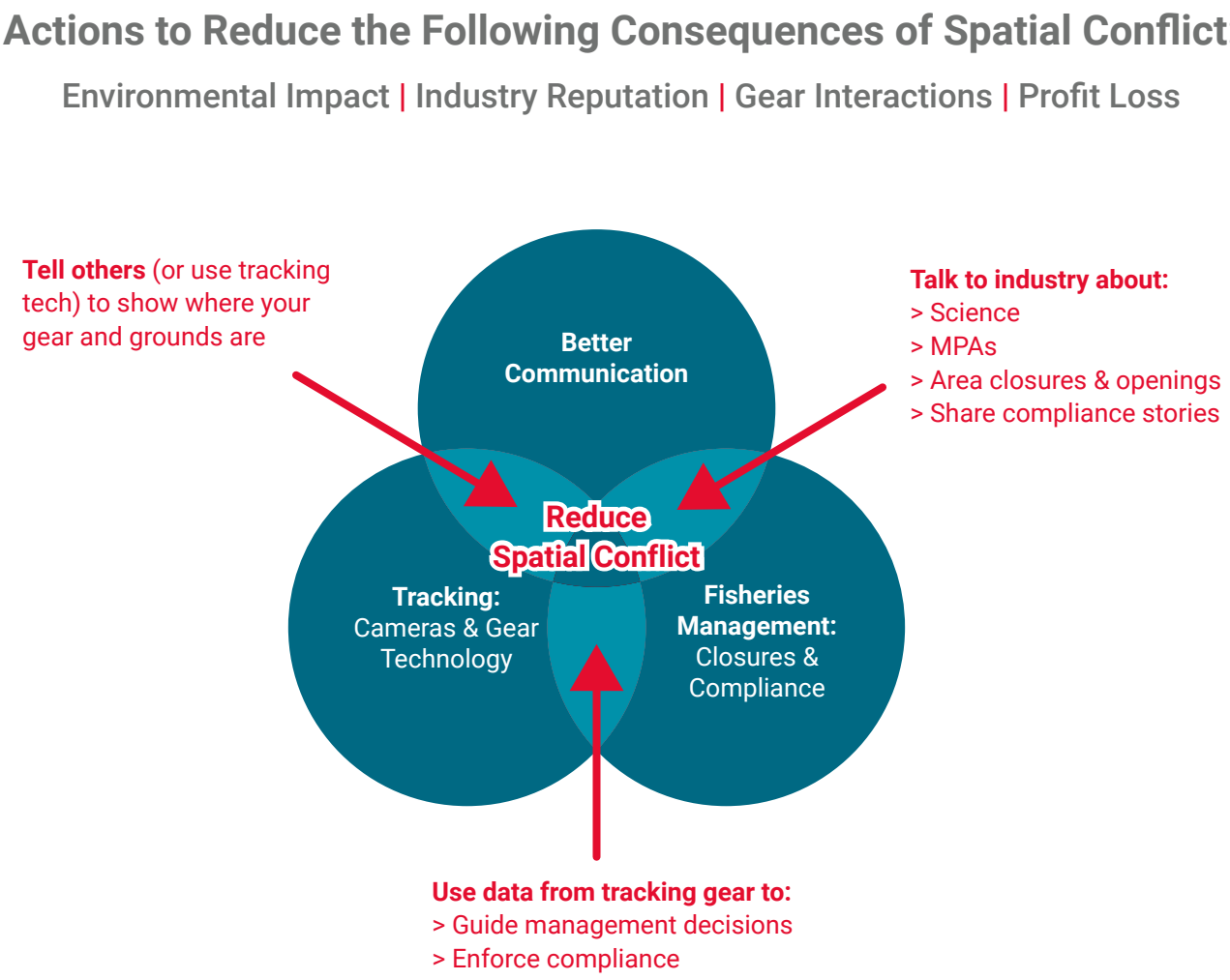
3. Improved gear and tracking technology could be accepted by inshore fishermen if it is **communicated clearly *how this information will be used to make fisheries management decisions*** about closures and compliance enforcement.

Actions that can have the most impact, by addressing multiple key ideas to reduce consequence from spatial conflict, are presented visually in **Figure 3c**. Importantly, most of these actions would need to be taken by both industry and government together to be successful as would perhaps be most effective in a co-managed fishery.

It was agreed that **compromise was crucial** as some people may lose access by trying to manage spatial conflict through formal management measures, and poor communication can create perceptions of 'the government trying to further limit our access'.

Industry knows better than anyone what is going on at sea, and it was strongly agreed **inshore fishermen should be engaged to work out how to best reduce spatial conflict** moving forward. The conference itself was acknowledged as a good step towards 'asking what fishermen actually want'. Some groups suggested this specific issue could be taken forward as a strong example of how the industry could lead a solution – perhaps as a step towards holistic co-management.

Figure 3c: 'Effective Actions to Reduce Consequences of Spatial Conflict'



KEY POINTS: Spatial Conflict

- Spatial conflicts are situations that arise from **'having too many fishermen in one place'.**
- There are **multiple causes of spatial conflict** including competition for space with other fishermen, aquaculture, renewable energy sites and the oil and gas industry.
- The most heavily discussed cause of spatial conflict was **fisher-on-fisher conflict.**
- **Fisher-on-fisher conflict has many consequences** that fall into four key categories: (1) environmental, (2) gear interactions, (3) profit loss and (4) reputational damage.
- There were **several suggestions about how fisheries management could work to reduce spatial conflict**. They can be categorised into ideas about:
  - Spatial and temporal separation
  - Better communication
  - Improved tracking and gear technology
- It is **helpful to consider how these ideas intersect when devising specific actions,** to most effectively reduce the instances and consequences of spatial conflict.
- Any action to reduce spatial conflict **are more likely to be successful if agreed and implemented by both industry and government.**
- **Industry feel they could lead on reducing the instances and consequences of spatial conflict**, on the way to implementing true co-management for inshore fisheries in the UK.

How to provide for access & deliver business certainty

THEME SESSION FOUR

CASE STUDIES SUMMARY

Small-scale fisheries: too big to be ignored?

Bjørn Hersoug, Professor Emeritus, University of Tromso, Norway

Hersoug reflected on three global case studies, summarised in brief below. He noted that what defines an 'inshore fishery' may vary significantly, from nation to nation.

New Zealand

New Zealand (NZ) fisheries management is often held up as a global exemplar. Hersoug commented that the NZ system of quota management can be seen as 'heaven' by economists, or 'hell' by social scientists. Due to the specific system of 'grandfathering' of fishing interests introduced at the outset of the current management framework, when it first came into force the threshold for access to grandfather-ed quota was set quite high. The impact of this was that part-time small-scale fishermen did not receive quota and therefore they were excluded from commercial fishing.

The system works on an 'industry pays, industry says' set up, whereby the fishing industry contributes roughly 65% of the costs of monitoring and assessment. Alongside this, an Individual Transferable Quota (ITQ) system shares perpetual rights between individuals, which are fully transferable and leasable, also enabling owners to borrow against their quota.

Whilst the ITQ has led to improvements in science, increases in exports and profitability for rights-owners, its introduction also led to the marginalisation of small-scale fishermen in NZ.

Chile

In Chile, where small-scale fishing is defined as vessels below 18m, a different system has had different benefits and challenges. Chile adopted a system of Territorial User Rights Fisheries (TURF) reserves – a spatially defined system, with limited access. This measure was initially very unpopular with small-scale fishermen. Now there are more than 1,100 TURFs in Chilean fishing grounds, producing mixed results: within reserves, the resource situation has improved, but outside TURF areas over-fishing has worsened and social conflict has arisen over who attains access.

Norway

In Norway, small-scale fishing is defined as vessels 11m and under. Norway employs an 'extremely complex', tiered, ITQ or Individual Vessel Quota (IVQ) system with different rules introduced for two vessel groups at different times.

Overall, the introduction of ITQs in Norway has led to strong profitability for vessels with guaranteed quota, but there is strong conflict around the issue of 'structuration' – or merging of quotas – pushing out smaller operators and limiting access for new entrants because of high investment costs. The Norwegian example has helped reduce overcapacity, but presents social and economic challenges for small-scale fishermen.

Take home messages

Exploring 'take-home lessons', Hersoug stated that ITQs in New Zealand have led to increased efficiency, less overcapacity and improved sustainability. However, they have also increased concentration of fishing opportunities, squeezing out small-scale fishers and creating quota 'serfs' within this group: individuals leasing quota for the short-term with no long-term perspectives.

Looking at TURFs in Chile, these resulted in increased participation in management of resources, but also led to the exclusion of many fishermen, and increased IUU fishing outside of reserve areas. ITQs in Norway have considerably improved the income for fishermen, and reduced over-capacity, but have evolved into an extremely complex system that threatens some small-scale fishing communities.

The examples discussed followed three different strategies: Norway utilised a model of *gradual* modernisation, transferring people out of the sector into aquaculture and other industries. The New Zealand option focuses on increasing profits and markets for

fishery products, in order to delay the need to transfer significant numbers of fishermen out of the sector. In Chile, the approach has been to secure exclusive rights for some fishermen, and leave 'exclusion problems' to local institutions. Hersoug concluded there is 'no quick fix' and a key lesson is that 'no one size fits all'. In all three countries the small-scale fishermen have struggled to maintain their rights and a fair share of the fish resources.

Building powerful fishing communities and organisations

Paul Parker, Manager Partner and President of 'Catch Together'

Paul Parker recounted the industry-led transformation of fisheries management in Cape Cod, USA. The fishery is predominantly family-owned businesses and vessels of 35ft-50ft (10-15m). A range of management systems cover different species – including limited access, catch shares for some stocks (such as cod, haddock and flounder), transferable trap tags (for lobster), and ITQs for others (such as scallops).

In the late 90s a combination of factors – lack of faith in the effectiveness of regulations, lack of confidence in fisheries science, and poor economic returns from the fishery – saw fishermen come together to form an alliance to protect their interests. The alliance bought an antique captain's house to serve as their headquarters, and hired young, enthusiastic staff – something Parker identified as crucial to the alliance building and maintaining momentum. He commented that the group 'always believed the solutions were within our control' and that the organisation was built on the energy of 'fishermen that cared a lot: we took time, we worked hard, and we had common cause'. The alliance started raising funds to support their operations, and evolved to proactively develop a catch share regime for groundfish and scallops.

The Cape Cod fishermen met at 8am in their alliance premises every morning for months for a standing meeting to 'hash out' who would receive what under the catch share system – self-determination being a crucial factor in finding workable ways to distribute quota, with every fisherman in the alliance having an opportunity to share their opinions.

A vision was developed to raise funds through debt or grants to purchase quota and make it available for small-scale fishermen in the community. From 2007, the alliance purchased small amounts of quota from retiring fishermen. A series of loans totalling roughly $2,000,000 allowed the alliance to expand, and a central pool of quota was built with options for local fishermen to lease from it.

Regular meetings continued, to ensure fair allocation and build in adaptations to the management programme as required. In 2019, the quota system 'anchors' 40 vessels to Cape Cod, employing 80-120 fishermen and ensuring that $6 million dollars in seafood landings are caught locally. The Trust has 'definitively and measurably created better-operated businesses', improved safety and economic returns, and created a pathway for new entrants.

Market-based management – *"Coastal fishing schemes"* and a cooperative: Experiences from Denmark

Mathilde Autzen, Industrial PhD Student, Aalborg University and Centre for Sustainable Lifemodes

Mathilde Autzen shared her perspectives on market-based management measures, and experiences from her home-town Thorupstrand – a small-scale fishing community in Denmark. Autzen recounted how, in 2007, the Danish government introduced an ITQ-like system (the Vessel Quota Share system) for the demersal fleet. Rights to a percentage of allowable catches were distributed permanently to existing vessels, enabling fishers to lease and buy quotas from each other.

Attendees at the Future of Our Inshore Fisheries Conference, 8 – 9 October 2019

One of the central aims was to deliver a flexible management system, that would deliver increased business certainty for fishers. Autzen stated that while this aim was met, it came with substantial cost for small-scale fisheries.

Under the system introduced in 2007, fishing vessels (primarily small-scale) with fishing income below a certain amount during a fixed reference period (termed Less Active Vessels) were given a license, rather than a quota share. With a license, they can catch a specific, small amount of the quota species - regulated every three months. If they want to increase their catch, they must lease quota from a quota share holder. The quota share system presents challenges for new entrants to the fishery: the initial allocation of quota was handed out to effectively just one generation, and with quota share prices being high, it is difficult for new fishermen to access fishing rights.

With the intention of 'protecting' the small-scale fishing fleet in the ITQ-like system, the Danish government built in a 'coastal fishing scheme' to cater for coastal, small-scale fishing vessels. Coastal fishing vessels (vessels under 17m that mainly do short fishing trips) are, in addition to their individual quota shares, entitled to further quota from a state-managed pool under time-limited coastal fishing schemes. While enrolled in the scheme they may only trade their quota shares with other members, preventing fishing rights being traded away from the coastal fleets. When individual schemes reach an end and another begins, vessels can withdraw and are able to once again trade their quota on the open market, while the state managed quotas remain in the pool to be allocated to another scheme.

Autzen underscored that, over the past 12 years of the ITQ system, despite measures such as the coastal fishing scheme, quotas had concentrated significantly – with demersal quota often ending up in the hands of large pelagic fishing businesses, resulting in severe impacts on small-scale fishing communities. She attributed this to different 'design flaws' in the system, noting that the Danish government had intended to avoid concentration, but a lack of a clear separation between small-scale and large-scale as well as between pelagic and demersal sectors had contributed to the current state of the system, as well as insufficient quota concentration rules and enforcement.

In 2017, in an attempt to address some of the consequences of the management regime, an additional 'protected' coastal fishing scheme was introduced from which, contrary to the original coastal fishing scheme, fishermen cannot opt-out. Voluntarily enrolled small-scale vessels remain permanently in the scheme along with their own quota shares. Joining the scheme is incentivised by substantial extra quota allocation relative to existing quotas – aiming to balance out the fact that those in the scheme can never opt-out and sell their own quotas on the open market. Vessels under 15m and some under 17m using defined low-impact gear types may join.

Autzen shared the consequences of the management system within her home town, where, following the impacts from the establishment of the ITQ system, the 'Thorupstrand Guild of Coastal Fishermen' was created to avoid the disappearance of the local small-scale fishing under a market-based management system.

The Guild was formed to ensure fishing opportunities stayed in the local community, and to try to generate opportunities for new, local entrants – who risked being 'priced out' of fishing as quota values soared. Having created a structure in which vessels owners and share-organised fishers collaborated, the Guild was able to secure a loan from a local bank to buy quota for the community. Fishers pay a fee and agree to a Code of Conduct to become members of the Guild and the fee is refunded when a fisher steps out of the Guild, but the values of the Guild, the quota shares, stay in the Guild for future generations. Fishers in the Guild have equal access and rights to the Guild's common quota shares, paying a leasing price to the organisation to access a share – with this leasing money then used to make repayments on the bank loans.

She noted the Guild has now passed to the next generation of fishers, who would have otherwise lacked economic resources for buying their own quota shares, but added that it has been a challenging process, demanding more than can be expected from every small-scale fishing community.

Autzen concluded by considering the overall effectiveness of the ITQ system against the Danish government's goals: she concluded that the system had several unfortunate consequences, and that it is the mix of "individual" and "transferable" in the design of ITQs that naturally challenges the livelihood of small-scale fishers and proves a strong barrier to new, less economically advantaged entrants.

BUSINESS CERTAINTY

What does business certainty mean to inshore fishermen?

Access and business certainty for inshore fishermen was one of the most complex discussion topics at the conference. It was clear that not everyone at the conference fully understood how fishing opportunities are currently allocated to inshore fishermen, adding to the complexity of views reflected here.

Key aspects of what access and business certainty mean for UK inshore fishermen are outlined on the following page.

Access to fishing opportunities

There was strong consensus that **access to fishing opportunities is inherently linked to business certainty** for UK inshore fishermen. Ensuring future access depends on two main things for inshore fishermen:

1. The **sustainability of fish stocks**, including:
   - **a.** Environment of fishing grounds, and
   - **b.** Consideration of how climate change will impact fish movements, and;
2. Having a **'fair share'** of the allowable catch, to make a good living.

While some groups questioned 'just how much damage inshore fishermen can do to stocks', most agreed it is worth learning more about stocks in order to ensure they are fished in a way that secures the future of the inshore industry for the next generations.

> *'You can't force certainty in fishing, if one year the crab doesn't show up then what? Sometimes it's up, sometimes it's down. You can support it but you can't provide certainty unfortunately'*

Some attendees, including both scientists and fishermen suggested climate change is affecting fishing, adding another level of environmental uncertainty to the future of inshore fishing. New movement patterns of fish and increasing frequency of severe weather episodes were specifically concerning, which could result in lower catches of 'traditional inshore species'.

> *'I've seen it [climate change] first hand. Every year, fishing is different. It's not really a management thing with this level of [climate] uncertainty. Everything is moving north, it is no longer here.'*

It was generally agreed that **good business and financial planning is essential** to a viable, long-term fishing business. Having reliable, timely information about catch entitlements can help fishermen with short- and long-term business planning. Some participants felt that allocations are based on poor evidence and are unfair compared to the quota system of 'offshore fishermen', meaning they don't consider inshore fishing a 'certain' business at all.

> *'There can't be both unlimited access and fishing certainty.'*

Assuming adequate access, **price and routes to market** are important to inshore fishermen when planning short- and longer-term fishing activity. Some groups raised concerns about the lack of opportunities to sell direct to local markets meaning fishermen received a poor price by selling at bigger markets where the 'local fish' are less sought after. Some suggested that Buyers and Sellers registration limits fishermen' options to sell locally, while others suggested fishermen' co-ops and online auctions could provide the inshore sector with more profitable and reliable points for sale.

New entrants

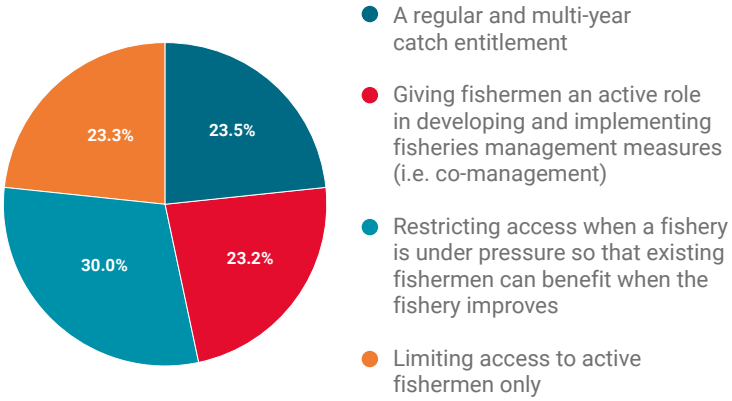
It was widely agreed that to ensure future certainty of inshore fisheries, **there needs to be adequate new entrants** – either as crew on vessels or by owning vessels and licences themselves. Current access arrangements create a barrier for new entrants because investment costs are high.

How do current access arrangements affect business certainty?

Groups discussed the ways that current access arrangements benefit or reduce business certainty. Most discussion focussed on how **current fisheries management access arrangements reduce business certainty for inshore fishermen**, and then identified ways management could change in the future. The key problems observed with the current management arrangements, from those discussions, are explored here.

Many participants thought the **u10m 'quota pool' allocation arrangement gave inshore fishermen a degree of flexibility** synonymous with the sector. Participants felt that long-term business certainty could be provided for through a number of options that were discussed throughout the session. When presented with four options regarding how to provide for business certainty, participants were fairly evenly split (see Figure 4a). Polling results showed 'restricting access to limit fishing pressure' was slightly preferred in comparison to the other options, however this was not reflected broadly in the discussions.

Figure 4a: How can long-term business certainty best be provided for?



Changing fisheries management rules to restrict access

Fishermen highlighted their perception that often **regulations to restrict access are implemented quickly**, and with little consultation. As well as having the potential to create spatial conflict (as discussed in section 3 on Spatial Conflict), sudden closures mean fishermen are not able to adapt their business plans and may suffer financially. Examples of these sudden closures causing problems include the bass ban and restrictions on Thornback rays.

Quota and the quota pool

By far, the most criticism on access and business certainty was related to quota allocations for inshore fisheries. Participants voiced that:

1. There are **inconsistencies** in how the u10m quota pool is allocated regionally across the UK meaning some areas tend to be happier with their access compared to others.

2. Participants feel there is a **lack of quota available to inshore fisheries.** Some fishers referenced that 78% (by number) of the vessels on the UK fleet register are under 10m in length, but the quota pool available for these vessels is 6% of the UK Total Allowable Catch (TAC)[2].

a. Note that while the portions of quota pool between the offshore and inshore sectors cannot strictly be 'generalised' in this way and should only be compared for each specific species, participants' perceptions about the division is prevalent among the inshore sector.

3. Producer Organisations (POs) distribute their quota allocation to their members but:

a. Not many inshore fishermen are members of a PO due to financial or other reasons, and so rely on the state-managed quota pool, which is allocated for a fixed period by the fisheries administrations.

b. POs function to different degrees of success around the UK.

c. Some POs have insufficient quota to 'go around', so there is displaced effort to non-quota species (including shellfish).

4. Devolved authorities divide up the quota pool at the start of the year, and access is allocated to inshore fishermen on a weekly, monthly or quarterly basis, that cannot be transferred to another period.

a. This can lead some fishermen to put to sea in unfavourable (and potentially unsafe) conditions to avoid losing their quota allocation during that period.

b. This **does not always correctly account for seasonal changes in species availability**, which will only become more complicated with climate change.

5. A certain amount of the pool quota remains unused each year, suggesting it is an inefficient method of allocation.

6. A **lack of flexibility in swapping quota pool allocations between inshore fishermen** compounds these other concerns. Without flexibility to swap allocations between themselves, fishermen are unable to develop a business plan that allows them to specialise.

7. Many inshore fishermen rely on non-quota species because they view quotas as 'restrictive', ultimately putting additional, potentially unsustainable pressure on those species.

2. Fisheries Management in the UK, Parliamentary Briefing, 5 December 2018, pg 23, https://researchbriefings.parliament.uk/ResearchBriefing/Summary/CBP-8457

FACT CHECK

How is the Inshore Fisheries Quota Pool Divided Across the UK?

Each year, the **UK government allocates a proportion of the total allowable catch (TAC)** for all inshore fisheries species to the 'quota pool' – accessible by the u10m sector – for each devolved administration. This proportion is fixed, based on the recorded landings of each home nation between 2008 to 2012.

It is the **responsibility of each devolved administration to set catch limits** for the u10m vessels in their home nation that are licensed to catch these inshore species from the quota pool. These catch limits are allocated and advertised to the inshore vessels on a weekly, monthly or quarterly basis, and the administrations do consider applications for allocation changes. While quota that is not caught cannot be automatically transferred to the next month, the MMO may allocate that portion into the allocation for a following period.

The catch limits ensure every inshore vessel with a licence to fish from the quota pool has access to the same volume of catch for each quota pool species, unless their licence states otherwise.
U10m vessels can have other access to quota in some circumstance:

- An u10m inshore vessel becomes a member of a producer organisation (PO) and so can then fish from the PO's quota allocation.
- Some vessels will have aggregated multiple licences to increase the tonnage and engine power allowed for a vessel, thereby increasing their capacity to catch rather than increasing their access to quota.

Licences within the u10m pool are not allowed to hold Fixed Quota Allocations (FQAs) under the current licensing rules.

New entrants

Current access arrangements **create barriers for new entrants into the inshore fishing industry**. Investment costs are high and include the vessel, gear and fishing licence. These costs are prohibitive for many people, unless they inherit (or are gifted) the business.

Inshore fisheries provide an important access point for individuals entering the UK fishing industry but at present many are priced out of the market. There was broad consensus **that facilitating pathways for new entrants is something the government should concern itself with**.

FACT CHECK

Fishing Licences for Inshore Fisheries

In the UK, no new fishing licences are issued. To purchase a licence, it must be bought directly from another fisherman or can be acquired as part of the purchase of an existing fishing vessel.

There is a limit to the amount of tonnage and engine power (KW) available to be used by fishermen within the UK. **Access to Tonnage and KW** (referred to as 'elements') **are held on fishing licences** if they are on vessels, and on fishing entitlements otherwise. Tonnage and KW are not allocated or sold by the devolved administration; they must be sourced from the open market because all the elements are currently allocated out to fishermen or are attached to existing vessels.

Licences are placed on vessels, and their access to quota allocation will depend on where the vessel is within the industry e.g. member of producer organisations (POs), part of the non-sector pool or the u10m quota pool. The MMO allocates quota to devolved administrations who then allocate these pools.

Licence holders that are in the pools (i.e. inshore fisheries) can fish against quota allocations held by that relevant pool. An u10m inshore vessel licence that is in the pool can become a member of a PO and then instead can fish against the PO's quota allocation.

For offshore vessels (non-sector over 10m) there are different categories of fishing licence that give different access to fisheries e.g. Cat A licence allows access to all quota species (subject to MMO allocation) where a Cat C licence only allows access to a small number of quota species. The less limited a licence or entitlement is, the higher its possible value on the open market.

Quota allocation is not determined by the licence as such, but rather by Fixed Quota Allocations (FQAs) that are held by individuals or companies.

Licence holders within the u10m pool are not allowed to hold Fixed Quota Allocations (FQAs) under the current licensing rules.

How can fisheries be managed in the future to ensure business certainty?

Several participants saw value in managing the entire marine system as a whole, rather than managing fishing in isolation, while others questioned whether MPAs and fisheries should be managed in tandem. Additionally, as fish follow seasonal cycles and respond to environmental changes, regulations and management need to be flexible and adaptive (and reactive – if required) for inshore fishermen to adjust their fishing practices and ensure business certainty.

Attendees agreed allocations **need to consider how inshore fishermen want to ensure future business certainty**:

1. access should be managed to ensure stock sustainability and to reduce environmental impacts where possible,
2. access should be equitable,
3. access should be achievable for new entrants.

Access to fishing opportunity

Access to fishing opportunity – discussed predominantly as **'the right to fish a certain portion of a stock', is of utmost importance** to the inshore fishing industry. Ensuring fisheries management regulations are designed so there is sustainable and equitable access for inshore fishermen is essential to their business certainty. For example, since inshore vessels have different abilities to catch fish based on their capacity, engine power and gear, some vessels may be able to catch their share of the quota pool in a shorter time than others. Therefore, implementing fisheries management access rules that account for differences in vessel capacity in the inshore fleet may work to reduce inequitable access.

Whether access should be managed through input controls or quota was thoroughly discussed and the perceived complications and merits of both options are further outlined below.

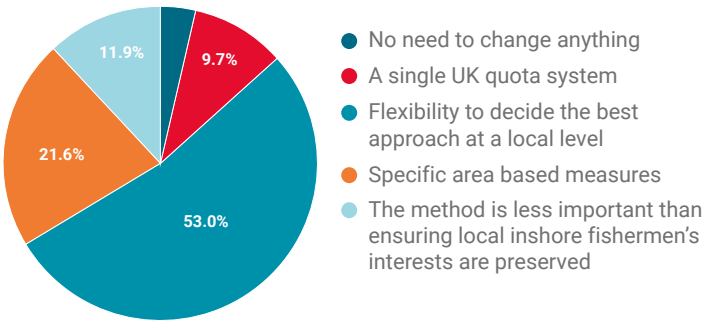
Input controls

Input controls – specifically managing effort through 'days at sea' – were discussed as an option for managing the impact of fishing on the stocks of non-quota species without introducing quota. In some groups, there were strong voices urging that these input controls should be discounted as an option – due to inequities that can arise with poorly implemented input control management and resulting concerns around long-term sustainability of non-quota species.

Despite the issues raised around input-controlled fisheries management, **most groups were in favour of bringing in some management rules for current non-quota species** and, overall, the option of trialling input-based management was perceived as less intrusive than new quota management for these species.

Participants mostly agreed that species currently not managed by quotas needs to change (see Figure 4b), with 53% believing that non-quota species should be decided at a local level and a further 21.6% of attendees believing measures should be specific area based.

Figure 4b: How should non-quota stocks be managed?

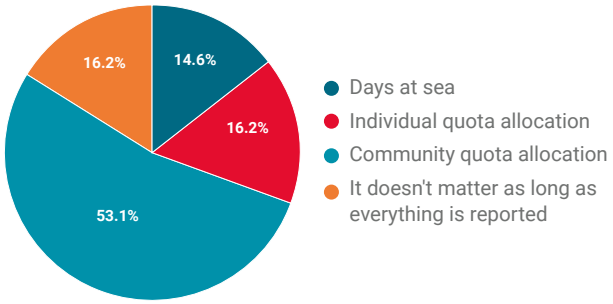


Quota and the quota pool

A **quota system was generally regarded as an effective method of fisheries management** due to its correlation with stock management and value. However, concerns were raised about expanding the quota system to other (currently non-quota) commercial species.

Most participants (53.1%) thought inshore species currently in the quota pool should be managed through community quota allocations rather than through individual quotas (16.2%) (See Figure 4c). However, the different definitions between these two allocation methods was not fully fleshed out during discussions and so requires some further discussion. There was a clear preference to retain quota management, with only 14.6% of attendees preferring a 'days at sea' input control as a way to manage inshore fisheries.

Figure 4c: How should inshore fishing effort for quota stocks be accounted for?



In response to the issues raised with the current quota pool, suggestions made for improving the system seemed to respond to two questions explored here:

1. how much fish is allocated to the inshore industry, and
2. how can it be fairly allocated amongst the industry?

How much fish is allocated to the inshore fisheries industry?

Many fishermen and some other attendees felt **there was insufficient quota available to inshore fishermen**, compared to the offshore fishing industry. In response to the observation that larger offshore vessels can physically catch so much more than the inshore fleet, some fishermen thought inshore fishermen could, and would, catch more if they were allowed – especially the 'super u10s' who have capacity to do so. Ensuring any catch limits are within a sustainable yield will further secure future business certainty for inshore fishermen.

Hope was expressed by some participants that **Brexit and the Fisheries White Paper and Bill** presented opportunities for the inshore sector to receive a greater share of UK fisheries quota allocations, and this was broadly supported around the room, referring back to a Defra consultation on the issue earlier in the year.

Additionally, a complete redistribution of UK fisheries quota was advocated for by a range of participants. Groups acknowledged that for the government to 'get quota back' from vessels in the sector who had already invested in it, would be difficult. However, reflecting the views of the large number of small-scale fishermen in the room, many participants suggested this approach was **worth the effort to redistribute the quota** and give a fairer share back to the large numbers of inshore fishermen around the UK.

Some groups suggested **government should buy quota from industry** and lease a proportion of it to fishermen based on certain characteristics (perhaps defined by a new inshore fisheries definition or classification system including: their capacity or community value), instead of for money.

> *'It's a commodity now and shouldn't be used as collateral. It's a national resource and should be treated as such.'*

Attendees raised concerns that small-scale fishermen have trouble accessing additional quota via licences, due to their cost. Multiple groups referenced difficulties in raising enough funds, including because UK banks do not lend as quota as it is a non-tangible asset – there is no guarantee fish will be caught and sold to recoup the value of the quota. Some participants recalled international examples of how quota, especially quota for fish where stocks are healthy, is considered a tangible asset that banks will allow people to borrow against.

Concerns were also raised about 'Quota Kings' – a person who accumulates quota, chooses not fish and instead profits by leasing quota to active fishermen.

> *'Big companies have big cheque books, we can't compete with that, especially when starting out, so you get guys who can afford a boat and licence but not the quota to fish.'*

Groups suggested that when someone leases quota or sells their licence, a percentage could be paid back to the local community (perhaps via a PO or IFCA) to fund industry infrastructure improvements. Alternatively, it could be used as loans for new entrants.

How can fishing rights be fairly allocated to the inshore industry?

U10m fishing licences include entitlements to a fixed share of the quota pool, which includes several different species. Inshore fishermen are also able to catch non-quota species some of which have very few restrictions, and they can also lease quota from the sector.While **some owners of u10m vessels are happy with their current share of the quota pool** as it 'is enough to make a good living', others were concerned about their inability to get increased access under their existing licence. This was often cited as an issue for fishermen who wanted to expand their businesses or specialise in catching a given species.

'When fishermen lost their ability to swap their fishing patterns [to target different species at different times], it damaged sustainability and created a race to the bottom.'

Additionally, while **some fishermen wanted to retain the flexibility to fish whichever fish was available on the day, others expressed desire to become more specialist**.

A system of flexibility was suggested whereby **inshore vessels could 'swap' their allocated quota**. Allowing fishermen to (if they chose to do so) swap their right to fish certain species in the quota pool with other vessels, allowing some vessels to specialise in certain species.

While POs have a role in swapping quota pool allocation between POs (and passing on the additional quota to their members), the **efficacy of swapping depends on the quality of the PO's negotiations** and fishermen can only benefit if they are members of a PO. Changing the rules to allow individual swaps to be orchestrated between non-sector fishermen would give them greater ownership of what they can catch.

Following these discussions, some groups discussed introducing **individual transferable quotas (ITQs) for all UK fisheries** including species not currently managed with quota. Some people thought this was unnecessary for the inshore sector, but most tables were at least interested in the concept in light of examples demonstrating that ITQs are a workable method to manage fishing opportunities. It was however highlighted that **limiting, or oversight of, the transferability of ITQs needed to be considered in their implementation**, so the scheme does not result in permanent concentration of quota into the hands of bigger businesses, ending up disadvantaging small-scale operators.

'We want a sustainable, responsible fishery. But it's a rat race. We need management. I don't want ITQs, but I would accept it'

Alternatively, within the current quota pool system, there was a **strong preference for quota pool allocations to be yearly**, rather than monthly to allow fishermen to plan their fishing activity more effectively. Participants felt this would improve:

- **Safety** – as fishermen could shift fishing effort across months, if necessary to avoid bad weather.
- **Feeling of ownership** – as fishermen would feel trusted to manage their efforts and stick within allocations.
- **Flexibility** – if fish movements or spawning changes with the season (temporarily) or due to impacts of environmental damage or climate change (more long term).

When discussing inconsistencies with access to the quota pool around the UK, most groups thought **better communication may deliver a more efficient allocation model**. An example from the conference: one government representative stated there is always latent capacity in the quota pool, while multiple fishermen told of experiences running out of their quota pool allocation – neither were aware of the other's experiences.

Considerations when allocating inshore fisheries quota

The implementation of an alternative system of quota allocation, such as ITQs could be informed by international examples. However, there were several specific suggestions across the room about exactly what needs to be considered before implementing ITQs in the UK inshore fisheries context.

Tie allocation to a new inshore fisheries definition

Allocation could be based on different characteristics of a vessel (i.e. capacity, gear used, engine type etc.) and could possibly be linked to a new definition of inshore fisheries (or any new vessel classification that arises from the definition). This would ensure small-scale fishermen have fair access to the quota, and under some suggestions – low-impact fishermen could be given preferential access.

Consult and communicate with fishermen before distributing quota

Any new system of quota allocation would require extensive consultation with fishermen, which could be achieved through co-management. Using a reference period to estimate fishing activity and assign rights accordingly has been used in the past, but can be fraught in data-poor fisheries such as the UK inshore sector. Additionally, if using 'recent' catch data, people may take advantage of the current lower restrictions (particularly for shellfish) to increase their catch – causing long-term damage to the stocks and amplifying safety issues by encouraging long days at sea with over-packed vessels.

Research and data to guide allocations

There was broad agreement that increased data and research should improve our understanding of the status (health) of a fish stock, which in turn can lead to more accurate allocation of fishing effort. How the industry can lead or contribute to relevant data collection is explored further in Theme 6 of this report. It is important that the link between data and access to the resource is understood. Initiatives such as implementing a harvest strategy for an individual stock can assist, by showing where a fishery is relative to its management target and in turn if current levels of fishing effort can be retained or need to be reduced.

Paying for access

Many people thought UK inshore fishermen would not be willing to pay for access to fishing rights as there is a perception that fees would go towards patrol vessels or enforcement that could be 'used against them'. Some participants argued that the right to fish is a public resource and therefore that access should not need to be paid for, but in contrast, some thought paying for the right to fish was fair because it was a public resource. Either way, the room broadly acknowledged that additional resources would be required to implement a new system of allocation of fishing rights. Additionally, people were more willing to contribute money if they could directly see the benefit – particularly so if the investment would improve their ability to have a say in local fisheries management.

Harvest Strategies

Harvest strategies are agreed frameworks for making ecologically sustainable fisheries management decisions. To account for variations between fish stocks, they usually incorporate ecological, social and economic aspects of individual fisheries to guide the development of fishery-specific management decisions.

Effective collection of data is often required to design and implement a harvest strategy, ensuring an evidence-based approach is taken to set catch limits, quota or effort restrictions. Baseline data for individual fisheries, such as biomass or fishing mortality, is often used alongside annual catch data to guide management decisions for the following fixed period.

Harvest strategies are designed depending on the ecological, social and/or economic objectives of each fishery – i.e. to maintain sustainable populations and pursue maximisation of net economic returns, as is the case in Australia[1]. Furthermore, harvest strategies should be designed such that the data they collect and use can also be used to measure the efficacy of the strategy at meeting its ecological, catch or profit objectives.

1. Commonwealth Fisheries Harvest Strategy Policy, 2018, www.agriculture.gov.au/sites/default/files/sitecollectiondocuments/fisheries/domestic/hsp.pdf

'[Fishermen] would be willing to contribute small amounts if they can see the benefits.'

New entrants

The policy question remains about how to ensure access to the resource enables new entrants to join the industry, while balancing fair and sustainable allocations that ensure the viability of the inshore fleet and its communities. This discussion also focused on enabling existing operators to grow and expand. Several suggestions were made about how policies could encourage new entrants into the sector, or encourage business development for existing fishermen:

- **Transferring quota or access rights directly to new entrants**: Access rights could be shifted from retiring fishermen to new entrants, perhaps a system could be put in place (and managed through POs).
- **Access to low interest loans for entry-level (and all) fishermen:** perhaps facilitated through local community groups, locally raised community funding, or by the PO.
- Acknowledging that UK banks are often unwilling to lend to fishermen, there were suggestions that **fishing rights could be given or loaned to fishermen who would pay it back at a low interest rate, with a proportion of the catch value.**
  - Such a system could be implemented by either the fisheries administrations or POs, and the return on investment could help pay to resource the scheme. This could be similar to the loan approach taken in the Cape Cod example, outlined by Paul Parker's presentation.
- **A new entrant 'training programme':** could be a prerequisite to accessing the exit/entry system.
  - Training could include existing mandatory and non-mandatory fishermen training as well as business and financial training.

To ensure new entrants are committed to the sustainability of the industry and the stocks it fishes, some groups thought **a 'vetting' process could be implemented when applying for inshore fishing licences**. The Poole Harbour clam and cockle fishery was cited as an example of how such a process for allocating licence can work, which is now certified by the Marine Stewardship Council due to good fisheries management.

How does community link to business certainty for inshore fishermen?

By considering social and economic benefits that allocation to inshore fishermen can bring to their community, an 'economic link' between inshore fisheries and their local communities is created. This can help strengthen buy-in from the community to support fishermen, perhaps enhancing opportunities and strengthening coastal economies.

Many groups discussed linking quota allocations to vessels based on a new definition of inshore fishing, and most thought **a vessel's connection to their local community could be incorporated into this definition**. Many groups discussed the possibility of retaining or expanding **community quota** rather than introducing quota owned by individual vessels as indeed, Producer Organisations (POs) allocating quota to their members is a community quota scheme.

Community Quota

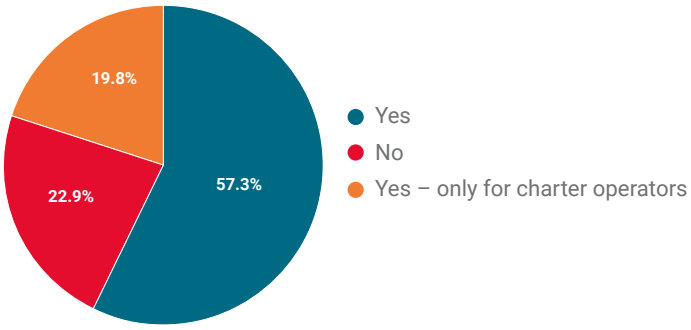
When a portion of the right to fish the total allowable catch (TAC) of a fishery is allocated by the government to a community group or association, the group owns the right to fish. Individual vessels do not own the rights to fish themselves but may become a 'member' of the group who does own the quota (perhaps by paying a fee), and the group can distribute and redistribute their quota to members as they see fit.

It was suggested the **inshore fishery community itself could band together more effectively**. If – for example – it were possible to combine multiple licenses or access rights onto a single vessel during winter months, fishermen could go to sea together on one vessel and so safety concerns associated with bad winter weather would be reduced while all fishermen would still have a chance to make a profit. Such a scheme would have to be supported by government as current rules don't allow 'combining licences for a time' and would need to ensure that catch levels remain within sustainable limits.

Recreational fishing

It was acknowledged that there is a strong link between recreational fishing and local communities, as angling contributes to local economies. However, as recreational and commercial fishermen access the same stocks, many participants were concerned that recreational fishermen have relatively less restricted access to inshore stocks, therefore impacting on business certainty for commercial inshore fishermen. When polled, most participants (57.3%) thought **recreational fishermen should be included in the management of inshore fisheries** (see Figure 4d).

Figure 4d: Should recreational fishing be included in any allocation mechanism?



How recreational fishermen could access fish needs to be reviewed, with some groups suggesting recreational fishermen should pay for a license to fish up to a catch limit or per unit of effort (i.e. per pot).

Determining historic catch effort – and so future catch limits – for recreational fishermen would be complex, but precedents have been set in other countries including New Zealand. Accounting for recreational catch in fisheries management decisions would give regulatory control over all sources of fishing mortality when making allocation decisions, especially when allocating catch by species, as proposed by Dr Ewen Bell earlier in the conference.

Seasonal limitations across the UK were also mentioned to try and counter the fact recreational fishermen sometimes have more pots than commercial fishermen for some non-quota species. The licenses for potting in the Devon IFCA was cited as a good way to manage how many pots both commercial and recreational potters could use.

Some of these suggestions appear to be aimed at managing unregulated fishing by any definition and so stronger enforcement of limits in inshore fisheries was discussed again – inclusive of how this should apply to recreational fishermen.

Tourism

Tourism is an important part of the economy for many coastal UK towns, and indeed the small-scale fishing industry or the seafood it produces, and these are often cited as key reasons people visit these places. Fishing is integral to coastal communities, providing aesthetics to a place but also, as discussed by Eddie Allison earlier in the day, nutrition to locals and visitors alike, with the potential to create brands or 'meroirs' to showcase local seafood specialities. Further, as fishers can act as stewards for the environment they operate in, their role in attracting tourists to a well-managed, ecologically diverse region should be acknowledged by communities.

There was general agreement that communities should therefore care more about what happens to their local fishing industry. Participants saw a role for groups such as the IFCAs in further **nurturing connections between communities and fishermen to work together for mutually beneficial reasons**.

While many people acknowledged tourism can help to improve investment in local infrastructure that may help the inshore fishing industry – like ports and places of seafood sale – some were also concerned that without a community connection between tourism operators and the inshore industry, some fishermen are being priced out of living in their own towns.

KEY POINTS: Business Certainty

- **Equity and tenure of sustainable access** is essential to ensure ongoing business certainty for the inshore fisheries sector.
- **Supporting new entrants into the industry is crucial** to the future of existing businesses and the industry, and this is currently not being sufficiently facilitated by the industry or government.
- There are **some advantages to the current quota pool system, but much of how it is designed does not fully support business certainty** for the current state of UK inshore fisheries.
  - A lack of future certainty (beyond the upcoming month) about access to different stocks and the inability to swap access rights within the quota pool are key barriers to business certainty.
- **A review is needed into the management regulations, including the quota pool,** that determine inshore fishermen access or the 'right to fish' a certain part of the stock to best ensure the future of fish stocks.
- **Whether a right to fish is allocated by input controls or quota is complex**, and there is some support for both options across the sector.
- **Future allocations of the quota pool, and quota more broadly, should be equitable across the inshore fishing industry**, to account for variance in vessel capacity, safety and a desire for fishermen to be as flexible or specialist as they desire.
- How the quota pool is allocated among inshore fishermen **should be linked to a new definition of inshore fisheries** and be **better communicated and consulted with the industry.**
- There is also merit in exploring **how quota allocation can be better tied to sustainable fishing practices,** perhaps through harvest strategies.
- The **social and economic links between inshore fishermen and their coastal communities should be celebrated** and used to further guide the development of sustainable inshore fisheries.
- By joining together, the **inshore fishing community can be effective in creating positive social and economic benefits for themselves and their broader community**. Such a process could be led by industry to work towards co-management of the inshore fisheries industry.
- **Recreational fishermen are part of coastal communities** – how they access the inshore fisheries sector – including whether their contributions to fishing mortality should be monitored – needs to be reviewed as part of this project.

Delivering compliance outcomes

THEME SESSION FIVE

CASE STUDIES SUMMARY

Why do fishermen comply with regulations?

Professor Linda Nøstbakken
Professor of Resource Economics,
Norwegian School of Economics, Norway

Professor Nøstbakken explored the subject of compliance with fisheries regulation, detailing a study carried out in Norway, that looked at different motivations and outcomes for compliance. A web-based experiment was developed, providing 'real world scenarios' for fishery management, with the incentive of a cash payment for those who took part. This experiment was combined with a survey on individual preferences when it comes to regulations and management, and researchers garnered responses from along the entire Norwegian coast. An initial survey was carried out in 2014, and a follow-up took place in 2019. 235 fishermen responded, alongside a control group of 400 non-fishers.

Some of the key findings of the research are summarised below:

- Results suggested some people feel the need to violate regulations in order to 'really be in the game' – i.e. to be competitive with fishing counterparts. Individual preferences matter here: those that are more risk tolerant will violate rules more.
- When asked why regulations should be complied with, penalties were not seen as a 'big deal'. A general driver of a sense that 'you should follow the law' was weighted more strongly.
- With that noted, generally individuals cared strongly about stock health and the environment, and about their personal reputation. Again, personal preferences were important: those who considered themselves to be altruistic were likely to be more compliant.
- Most people in the sample believe themselves to be 'much more compliant' than their peers.

Overall, Nøstbakken said, personal preferences and identity matter much more than anticipated, rendering the 'incentive base' for compliance much more complex. She also highlighted how norms affect behaviour: social norms play a strong role. Enforcement of regulation can also affect norms: people do not value rules that are not enforced, so the nature of punishments themselves may matter less than regulators' willingness to apply them.

The 2019 survey results showed 90% of fishermen felt regulations were 'a necessary evil' and 95% felt it was okay to be inspected if it helped to secure the sustainability of the stock.

In terms of headline advice for UK inshore fisheries, Nøstbakken imparted:

- Stocks need to be protected, and therefore catches need to be limited – we need quotas and other regulations.
- These regulations must have 'proper enforcement' to have value.
- Industry support for conservation and regulatory measures should be fostered, to develop social norms around compliance.
- Regulators should tackle the 'race to fish' by finding ways to limit fishing capacity. Catch shares or individual quotas are a tool to achieve this.
- Regulators should work to achieve management of the ecosystem and habitat: giving fishermen rights can lead to better ecological outcomes.

DISCUSSION SUMMARY

INSHORE FISHERMEN COMPLIANCE

There was broad agreement that **inshore fishermen were, on the whole, very law-abiding**, with only a few 'bad apples' tarnishing this reputation. There was consistent agreement that **sustainability is of paramount importance**, and that engagement on this front was especially high amongst younger fishermen, with young skippers in the south-west trawler fleet referred to as good examples.

Enforcement

Fishermen highlighted that lack of enforcement means that non-complying vessels have a considerable competitive advantage over compliant colleagues. As a result, non-compliance has become somewhat more desirable.

The reasons for lack of enforcement were generally put down to **a scarcity of resources, although inshore fishermen also felt they were comparatively 'easy targets' for regulators**, and therefore experienced more enforcement than offshore fishermen. It was also suggested that non-UK boats in UK waters were subject to fewer enforcement measures than UK vessels. Some groups suggested other areas of the fishing industry (or government) could help fund enforcement, and receive return on investment later on.

'I feel like a fool when I follow the law and I see the next boat over is not and profits more than me.'

VMS was often mentioned as a potential to boost compliance, but opinions were very mixed. Some felt the measure was akin to 'spying' and indicative of a lack of trust, as well as being potentially costly to fishermen if they are expected to purchase or maintain and repair equipment. In contrast, some felt it could be a robust protection measure against false accusations and would stop non-complying vessels having an unfair advantage. Additionally, it was acknowledged that VMS can play a key role in improving the amount of information held about inshore fisheries – by providing insights into areas targeted by fishermen and potentially information about catch volumes. Ultimately, this type of **improved information would help guide evidence-based fisheries management decisions which may in turn, further improve compliance**.

Groups discussed who should enforce regulations. It was suggested that some IFCAs enforce rules more effectively than others, and that there is a disconnect between national legislation and local enforcement. The role of Devolved Administrations and top-down, overarching management from government was mentioned, but it was generally agreed that **specific management regulations should be designed, implemented and enforced at the local level**, and should respect individual fish stock regions more than arbitrary administrative boundaries.

The enforcement process was also viewed as cumbersome. Non-compliant vessels are only identified if they are reported and, even then, it remains difficult, expensive and time-consuming to gather evidence and prosecute. Some suggested a fixed administrative penalty in the case of low-level non-compliance would ensure small-scale offenses are still enforced, without having to face a protracted court case. However, there were objections to this approach because it implies inflexibility and not allowing fishermen an opportunity to state their case.

Communication

Poor communication was also consistently suggested as a leading cause of non-compliance. **Any regulations which were considered lacking in rationale were said to face much lower levels of compliance**. The case of the bass ban, where fishermen believe stocks are healthy, was raised as an illustrative example. This ties into a lack of transparency in the enforcement process. **The reasons behind many regulations are unclear to fishermen, and as such, compliance doesn't seem sensible**.

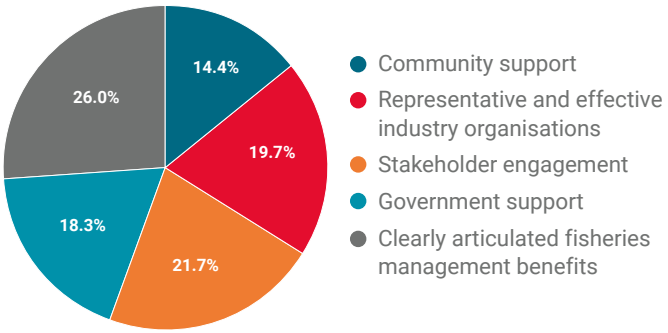
The Landing Obligation was put forward as a key example of poor regulatory measures. It was felt to be 'neither achievable nor desirable', and therefore compliance was low as there was less commitment from inshore fishermen to adhere to the measure. It is viewed as penalising those who comply with the Obligation, as those who do not are rarely prosecuted. This also raised moral dilemmas for fishermen when they are legally bound to land unwanted catch that may have survived being returned to the water.

Some groups reflected that the disconnect between regulators and fishermen could be addressed through **improved data gathering, evidence sharing and responsive measures between fishermen, regulators and scientists**. This would also help to build trust and strong working relationships, which are currently both severely lacking. **Clear communication to fishermen about how new regulations can benefit them in the longer term**

would be very beneficial. Linking back to an earlier theme of the conference, some groups reiterated that co-management may also include fishermen and scientists in the decision-making process, and this may improve communication to also benefit compliance.
Fishermen voiced that sometimes, non-compliance can be unintentional or unavoidable. Regulators need to have a deep understanding of fishing to be flexible enough to account for this. **Often 'honest mistakes' are the result of poor communication of new regulations to fishermen**.

Most respondents felt that better communication would encourage good compliance (see Figure 5a), with 26% stating this could be best achieved through clearly articulating the benefits of fisheries management, and 21.7% and 19.7% stating this could be achieved through stakeholder engagement and better industry representation, respectively.

Figure 5a: What factors need to be in place to enable industry to encourage good compliance in their fishery?



Social factors

Peer pressure was believed to fuel both compliance and non-compliance. **Social stigma surrounding non-compliance can encourage fishermen to comply,** but on the other hand **solidarity among fishermen means many won't report non-complying vessels**.

In the wider supply chain, growing rejection of 'black fish' by restaurants and other seafood retailers means that **non-compliant fishermen simply can't sell their catch**. The Cornish Sardine Management Association was raised as a successful example, where engagement throughout the supply chain has led to high levels of compliance. This market force is driving compliance, however, some anecdotes suggested non-compliant seafood buyers can exacerbate or legitimise illegally caught fish.

On occasion, **compliance is also viewed simply as impractical or prohibitively expensive**. For example, gear modifications can carry a twofold short-term cost of the upfront cost of new gear which actually reduces catch after instalment. This can especially impact smaller-scale vessels who can sometimes not afford extra equipment, or the shortfall in catch it can create, thereby creating inequity across the inshore fleet. It was suggested that forward-thinking financial compensation for compliance measures such as gear modifications and vessel tracking would greatly improve levels of compliance.

Penalties

Most groups agreed **there was often a mismatch between the misdemeanour and the resultant penalty**. Many felt, for some instances, fines were too small to act as a proper deterrent. Additionally, some groups went as far as suggesting the current system implicitly favours larger vessels more able to absorb fines into their 'business expenses', compared to smaller, less profitable vessels.

There was a rich array of suggestions for alternative penalties including:

- **Earnings-proportionate fines,** to circumvent the discrimination against lower earning vessels;
- **Confiscation of gear** from offending fishermen;
- A **'points' system for fishing licenses**, which would be lost for misdemeanours and the license revoked after a certain number of offences; or
- **Compulsory courses** on environmental stewardship.

Buy in

Some regulations are broken more often than others, and there was the feeling that the reasons behind these need investigating. Since inshore fishermen are generally eager to comply with legislation, it was felt that **widespread non-compliance to a specific measure would more likely be rooted in an ill-conceived regulation.**

This perception highlights the need for flexibility in regulation and the **capacity for feedback from fishermen to regulators, to ensure regulations are fit for purpose** when they are designed and over the course of their implementation.

> *'Good laws enforce themselves; bad laws are unenforceable.'*

It was agreed that implementing co-management and involving fishermen in decision making would improve buy in to rules and compliance. Participants thought this would help to provide a 'sense check' on any proposed measures – to ensure they are relevant to local situations, and it was agreed this would also **give some ownership of the regulations to fishermen.**

KEY POINTS: Compliance Outcomes

- **Inshore fishermen are on the whole, law abiding** and want to comply with regulations.

- **Wanting to fish sustainably** was a key reason that inshore fishermen thought regulations were necessary and should be enforced.
  - Lack of compliance and under reporting of catch reduces the accuracy of catch data, thereby making the regulations based on this data less robust and potentially resulting in unsustainable fishing practises.

- **A perceived lack of enforcement**, compounded by **inconsistent enforcement around the UK** was cited as a key reason some fishermen do not adhere to legislation or regulations.

- **Compliance is often viewed as cumbersome** or expensive and so although gear technology or vessel monitoring may be of interest to fishermen, it can be readily dismissed unless financial incentives are offered.

- **Non-compliance often happens as a result of poor communication** about:
  - Timing of new regulations,
  - The reasons for the new regulations (i.e. the scientific evidence guiding the decision),

- **Social factors like peer pressure and price at market can encourage fishermen to adhere to regulations**. However, **social factors like 'fear of missing out on fishing' and the sheer cost of compliance technology can also reduce compliance**.

- A **mismatch between misdemeanours and their associated penalties** mean cost is not an issue for bigger operators who know they can fetch a decent price for unregulated catch.

- **A range of 'alternative' penalties for lack of compliance were suggested** including:
  - harsher penalties,
  - confiscation of gear, and
  - a 'points' system attached to fishing licenses.

- **Designing a more effective compliance system could be an early goal for inshore fisheries co-management** because greater ownership over the system would likely work to reduce non-compliance.

Attendees at the Future of Our Inshore Fisheries Conference, 8 – 9 October 2019

Enabling industry-led science

THEME SESSION SIX

CASE STUDIES SUMMARY

The Commercial Fisheries Research Foundation: Engaging Fishermen to Support Science

Fred Mattera, President, Commercial Fisheries Research Foundation, Rhode Island, USA

Fred Mattera detailed the development of the Commercial Fisheries Research Foundation – which had been born out of the idea that, as fishermen: 'if we own our data, we have power'. Seven fishermen founded the organisation, and in the past 11 years, 155 fishermen have collaborated in research projects, aiming to gather information on data-poor fisheries, and reduce the time-lag between data capture and management decisions.

The Foundation uses a 'research fleet approach', whereby commercial fishing vessels are chartered using the organisation's funds to carry out data capture, with systems of tablets and apps, and integrated 'electronic callipers' to gather length data on shellfish.

Attendees at the Future of Our Inshore Fisheries Conference, 8 – 9 October 2019

The Foundation has carried out a range of large-scale projects, but Mattera described an initiative focused on lobster and Jonah crab as their 'crowning jewel'. $3.5 million in congressional funds allowed the Foundation to put out paid requests for projects to commercial fishermen. During research fishing trips, fishermen are allowed to keep and sell all of what they catch, but 50% of the value of the catch is returned to the Foundation – generating a sustainable financial model. Previous to this initiative, there was no stock assessment data for these species, so new data captured by 21 fishermen (so far) now allows for a much more accurate picture of the fishery.

Other research focuses on effects of climate change – the Shelf Oceanographic Research Fleet, funded by the Foundation, detects changes in water temperature across the water column, linked to ice melts. This data can be linked to species preferences and locations: Mattera said how fishermen 'love the data' and have been able to fish more effectively by tracking where warm water columns are within the fishery.

Other research projects examine the life-cycles of species such as black seabass, and gather data on groundfish populations around wind-turbine development areas.

The Foundation has also started to support research for innovative marketing initiatives. A common non-target species – scup – has been producing significant discards in the fishery. In order to address this, and bring value to the catch of this species, the Foundation identified a target market price and is now developing scup fillet products with the supply chain aiming to help the fish reach this value.

Key stages in the industry-led science model

Key Messages

Dr David Middleton, CEO, Trident Systems

Dr Middleton discussed why industry involvement in fisheries science and management is a 'good idea'. He noted that it can be beneficial for efficiency, as governments are typically 'inefficient'. Additionally, he asserted that science 'benefits when industry is involved' – sometimes seafood industry knowledge is 'ahead' of formal scientific processes, putting the industry in the position to take rapid action when required.

In New Zealand fisheries, industry has a central role in science and data collection, and in management – through a range of committees. Dr Middleton explained how this is working more or less effectively, dependent on the specific fishery in question. In some areas management remains 'contentious'. The industry is engaged in part because of a growing awareness of the need for the 'social license' to fish: fishing is no longer 'out of sight, out of mind' and increased transparency is continually demanded of fishing operators. There is also an economic incentive for fishers to be heavily involved in fisheries science: as poor fisheries management has a direct implication for fishing businesses' profitability.

More fundamentally, fishermen also value defining and shaping management objectives, and tailoring data collection to meet the needs of those specific objectives. He described how, with fisheries in New Zealand and elsewhere, often the impetus to introduce an industry-led system has come from 'negative' circumstances: a collapse in stocks, for example. In this sense, the first stage of the process is often 'grieving', followed by 'anger and denial'. Moving towards 'acceptance' and onwards to success requires some key steps, which Middleton detailed as:

- There needs to be appropriate incentives for industry to be involved in data collection and management (noting the pre-existing economic incentive to contribute to strong management);
- It is necessary to set overarching objectives, and then plan research appropriate to those objectives;
- The industry must demonstrate its ability to collect high quality data, and regulators must be committed to using this data to inform fisheries management;
- Work must be consistent: fisheries science needs long-term data series;
- The role of government varies, dependent on the system, but an 'enabling policy environment' is required, including clear standards for industry science, and support for open and transparent peer review;
- Government has an important role in funding fisheries science, however;
- Self-funding may be preferable in some circumstances – 'it is hard to be fully involved if someone else is holding the purse strings'.

INDUSTRY-LED SCIENCE

Inshore fishermen have mixed motivations for taking part in research

Significant willingness to engage and participate in collaborative research was expressed by fishermen, although **there were mixed views around the need for incentives** for this. **Many consider science to be essential to the industry and so take part in research on behalf of the fishing community**. Fishermen's main motivation for taking part is that the resulting research will lead to more information available to the industry and have an impact on the future of fishing and improve stock management. For others, the 'in-kind' or altruistic value was not considered sufficient motivation for taking part in research and **several participants expressed an interest in being paid for their time**, for vessel use or similar compensation. It was noted in several instances that payment for services had been agreed but not received and this should be avoided going forwards. Other alternatives were also presented, such as fishermen being keen to take part in research if they received some other form of compensation, such as extra quota or relaxed effort restrictions.

Some concerns were also raised about the implications of having more data on inshore fishing. For example, the loss of sustainable certification, more restrictive management measures, or a loss of earnings. On balance, **it was felt that the benefit of having more data outweighed the potential risks**. It was considered that a more open channel of communication between fishermen, regulators and scientists would help clarify why evidence-based decision making is needed and would provide additional incentives for taking part in research.

Collaborating to combat data scarcity

It was widely acknowledged that **data scarcity is a problem for inshore fisheries management.** Lack of data or poor quality data means there is significant uncertainty in stock status leading to challenges certifying fisheries as sustainable; and further challenges associated with working under the precautionary approach. There was agreement that collaboration could help bridge this gap.

Several participants highlighted that inshore boats could be hired for data collection, as is done by some IFCAs, or **fishermen could be contracted to collect data**. This was proposed to address resource limitations for scientists. The value of existing schemes, in which fishermen play a vital role in data collection, was emphasised.

Repeatedly, the use of remote electronic monitoring was referenced as a means of combating data scarcity. Participants highlighted that **cameras may facilitate efficient collection and publication of catch data**, improving on the current method of publishing landings information in a way that was considered too slow to properly inform fisheries management and quota decisions. Additionally, remote monitoring of vessels or catch provides an opportunity for both fishing and environmental changes to be monitored.

The importance of **incorporating the local, experiential knowledge of fishermen** was also highlighted, particularly incorporating their understanding of stock health or why they use a particular approach to catch a certain species. Incorporating experiential knowledge into fisheries science may also improve relationships between fishermen and researchers, particularly as it would **demonstrate that industry knowledge is valued** and, consequently, this would **help to build trust**.

Attendees at the Future of Our Inshore Fisheries Conference, 8 – 9 October 2019

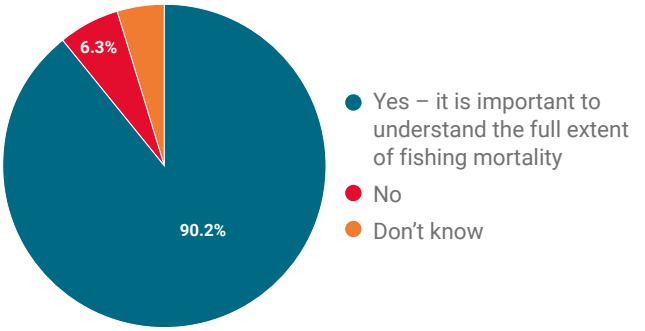
There were mixed views around data quality, including both a perception that fishermen collect lower quality data than scientists, and that scientists are poorly equipped to collect fisheries data (as scientists have less fishing experience than fishermen). These concerns around data quality were touched on, with much greater focus on the **opportunities for skill-sharing between scientists and fishermen to improve existing practice**. It was felt that clearer methods (for example, simple, image-based guides) would help fishermen collect scientifically sound data. It was also suggested that training fishermen would improve data quality, while ensuring data is industry-relevant and collected by smaller vessels, using appropriate gear etc. Similarly, on-board skill sharing was suggested to help scientists (and others) better understand the needs of fishermen, leading to approaches that are more industry-relevant and greater trust between groups.

As well as a willingness to learn from others, participants were keen to work in collaboration to achieve the best results for science and for the industry. Many fishermen were eager to participate in research and data collection and were keen for scientists to come aboard. It was widely viewed that **collaboration between scientists and fishermen is essential** to ensure effective stock management.

Numerous effective examples of collaborations were cited including the Fisheries Science Partnership in Cornwall, which started out monitoring sole and monkfish and has since expanded. Fishermen contribute to different stock assessments, gear research and real time management of spurdog in exchange for their time. Specifically, fishermen reported participating in a bycatch avoidance programme that allowed them to land a small number of spurdog which (otherwise) currently has zero TAC, but is anecdotally becoming more common in the South West. Less positive experiences were also expressed, with multiple participants saying they used to take scientists on board to take catch samples or monitor stock, but the **fishermen never heard about the results of the studies, and so are now hesitant to participate**. Some participants acknowledged lessons can be learned from these experiences and applied to ensure successful collaborations going forwards.

Harking back to earlier discussions about accounting for all sources of fishing mortality, some groups thought accounting for recreational catch was important. Additionally, while not explicitly discussed on all tables, live polling data (see Figure 6a) shows participants overwhelmingly (90.2%) support recreational fishing surveys to ensure data is gathered about all sources of inshore fisheries mortality.

Figure 6a: Should there be regular recreational fishing surveys?



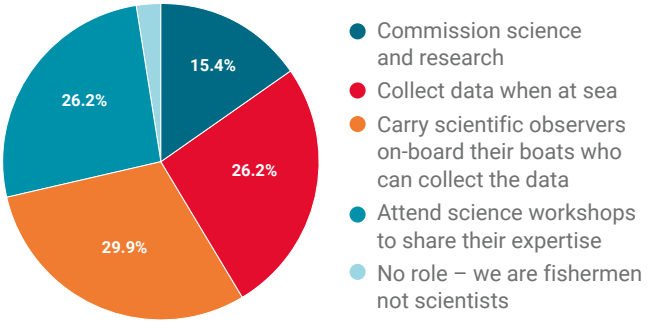
Communication is key to positive science-industry collaborations

There was strong consensus that **continued engagement with the fishing industry throughout all aspects of fisheries research is needed**. The importance of feedback was considered essential, not only of research findings, but also the implications of findings for management and – where relevant – the resulting action. Without continued engagement, participation in research was not considered worth fishermen's time.

Additional questions were raised around the usefulness of getting involved in fisheries science when the resulting management action was several years later. It was suggested that continued engagement, for example through co-management, which – if in place – would help to explain why delays in management measures occur. Continued feedback was considered vital and a range of approaches were suggested, including face-to face contact, newsletters and options that would not require the need for a smartphone.

Almost all participants agreed that inshore fishermen can have a role in fisheries science (see Figure 6b). Almost a third (29.9%) said carrying scientific observers on board was an inshore fisher's role. 26.2% of attendees thought inshore fishermen should collect data while at sea and a further 26.2% thought fishermen should attend scientific workshops to share their at-sea experiences.

Figure 6b: What role should the inshore sector have in the science process?



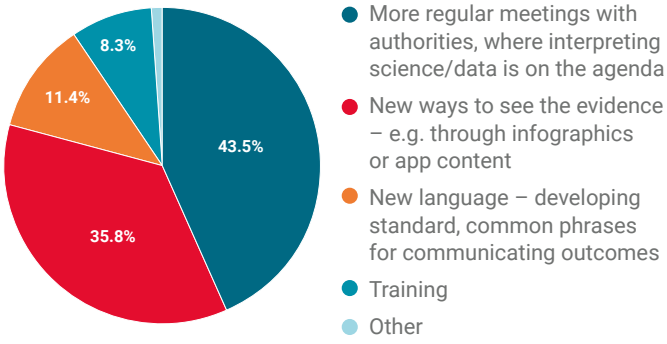
While there was consensus that science was needed, some participants were sceptical or had little trust in it, highlighting that scientists don't have the same knowledge as fishermen, and felt this was rarely acknowledged by the research community. Participants shared that they **felt greater ownership when they had been involved in research**, with much greater trust in data that had been collected with industry involvement. It was clear that an open channel of communication throughout the scientific process was vital – and that **transparency is needed to build trust**.

It was suggested that by spending more time on-board fishing vessels together, scientists and fishermen could build better relationships. However, it was acknowledged there may be reduced capacity for scientists to always take up such offers due to resource constraints or limited vessel size.

Transparent approaches were also seen to help support trust and provide clarity around which methods are used to collect fisheries data. **Participants considered an open approach to be valuable, not only to build trust, but also to understand why new management measures are put in place**.

Specifically, how to better communicate science and evidence that guides fisheries management was discussed, as attendees agreed they would like to be better informed of this linkage. Almost half of the participants (43.5%) would like to attend additional meetings where explaining science is on the agenda, and a further 35.8% would like to see evidence and management decisions presented in new ways (e.g. through infographics or app content) (see Figure 6c).

Figure 6c: How can we better communicate the science & evidence behind management to industry?



There is no consensus around science funding

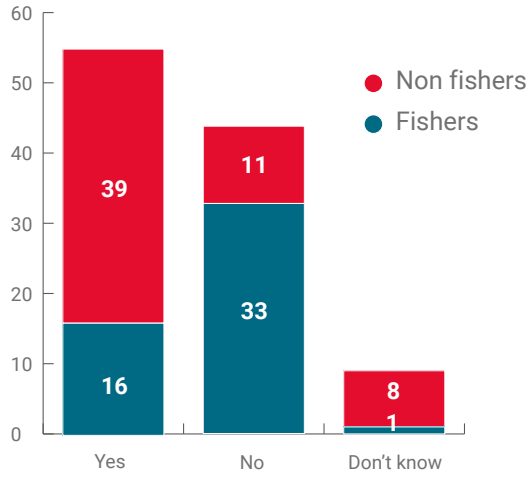
There were mixed views on funding priorities, with some participants considering that a better understanding of fisheries science is essential while others felt other management issues should take priority (the nature of these issues was not discussed). It was acknowledged **that industry and the scientific community should come together to develop shared funding priorities**.

A variety of funding sources were cited, including retailers, NGOs, the fishing industry, government and universities, and spread across the full supply chain. Several positive experiences of industry-university collaborations were shared, and it was suggested that universities and larger scale fisheries could co-fund research. Many cited government funding as a good source of neutral support for fisheries research but acknowledged that this was a limited resource. It was highlighted that funders should have freedom to choose what they fund, but there is a need for collaboration to avoid duplication of effort.

Many participants were not in support of a levy to fund fisheries research. However**, some participants shared they readily pay for scientific work** and would continue to do so. An example was given for how the fishing industry in Holderness has collectively funded a vessel to provide insight into the stocks they target, thereby ensuring the data collected is industry-appropriate.

In two separate polls most of the people who did not think inshore fishermen should contribute financially to science were fishermen (33 out of 44), while people who thought a science levy should be paid by industry were predominantly non-fishermen (39 out of 55) (see Figure 6d).

Figure 6d: Should the inshore fishing industry should pay a levy towards fisheries science and data collection?



Several participants expressed interest in funding science if there were clearer implications for management (although less interest was shown if the outcomes were not favourable for the industry).

It was more common that fishermen were willing to support fisheries research 'in kind' (for example, through the use of the fishing vessel while out) than by paying for it directly. Overall, **there was no consensus that a particular group should be responsible for funding fisheries science**.

KEY POINTS: Industry-Led Science

- **Collaboration between scientists and fishermen is essential** to ensure effective stock management. Many consider science to be essential to the industry and take part in research on behalf of the fishing community.
- **There are mixed views around the need for incentives** for helping to collect data for fisheries science. Many were happy to do it on the basis that it would reap future benefits, others wished to be compensated for their involvement.
- **Data scarcity is a problem for inshore fisheries management**, leading to challenges associated with stock status, certification and management. Several solutions can be used (in combination) to tackle data gaps, including greater involvement of fishermen in data collection, the use of experiential knowledge and remote electronic monitoring.
- **Communication is vital to successful industry-led science**. There should be continued engagement with the fishing industry throughout all aspects of fisheries research.
- **Clearly communicating the links between evidence and fisheries management decisions is crucial.** Fishers should be informed of, or included in, the process for evidence-based decision making as it would improve trust between industries and compliance.
- **Transparency is needed to build trust**. An open approach is valuable, not only to build trust, but also to understand why new regulations and management measures are put into place. Fishermen have much greater trust in data that was collected with industry involvement.
- **Industry and scientists should develop shared goals** and ensure that the data collected is appropriate for managing a particular fishery.
- **Funding for fisheries science will likely need a mix of approaches**. There was no consensus that a particular group should be responsible for funding fisheries science.

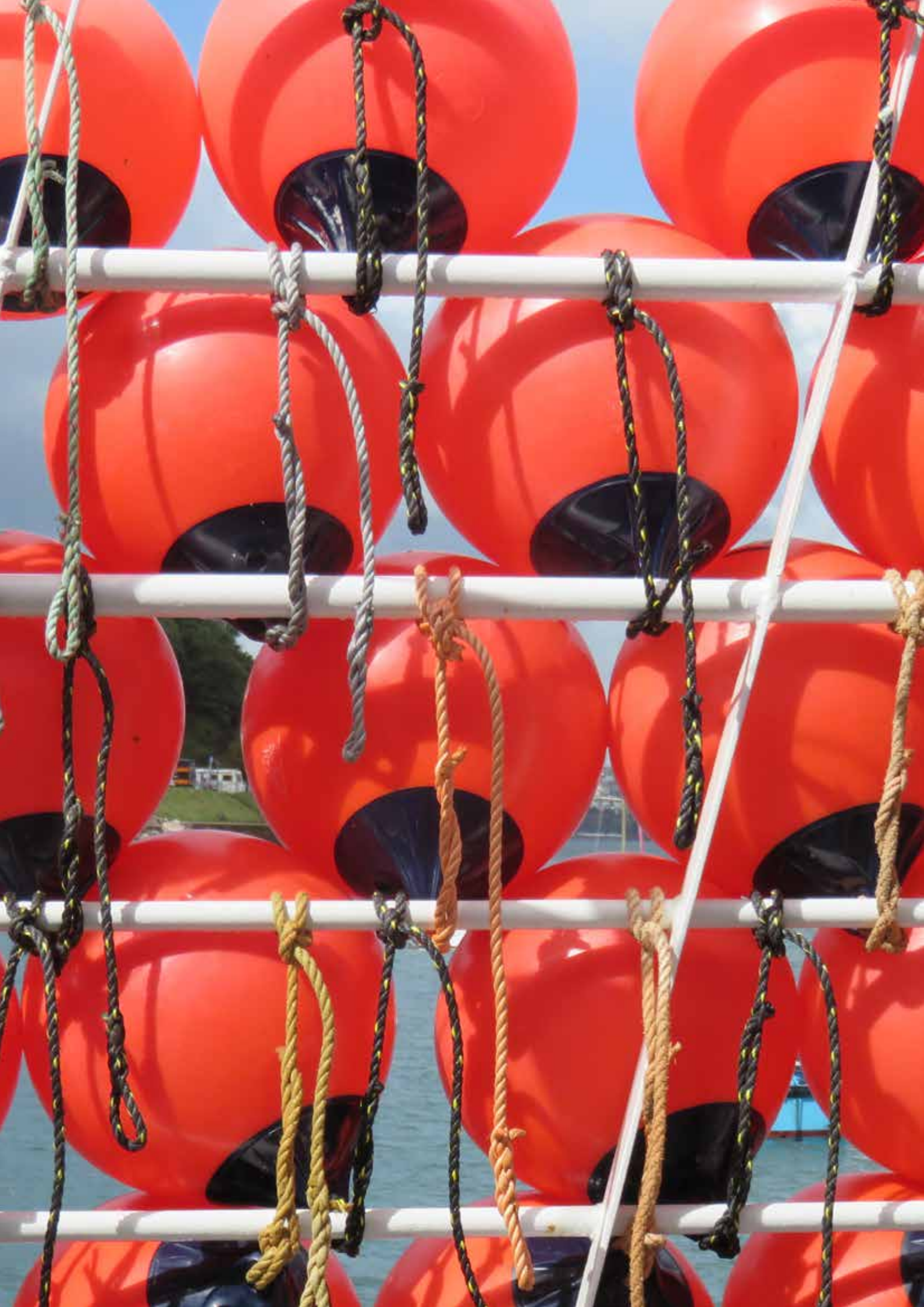
Conclusions

In a post-conference survey, participants were asked to indicate what the priorities for the project should be, going forward. Progressing fisheries co-management emerged as the top priority (supported by 70% of respondents) followed by improving access to the fishery (55%), and enabling industry-led science (54%) – see Appendix 1 for a summary of the feedback survey results. In addition to these priorities – and in line with some of the key points noted in this report – survey participants also noted that developing an appropriate definition for inshore fishing is key, and that future approaches to management must be flexible or tailored to suit different regions.

The conference was a crucial first step in gathering stakeholders together, starting a dialogue and beginning our journey in fisheries co-management. The collective views, knowledge and experience gathered at the **Future of Our Inshore Fisheries** Conference and presented in this report provides an important guidance document for shaping how the Steering Group.

This report summarises the nature and complexity of extensive discussions held over two days at the **Future of Our Inshore Fisheries** Conference. While the purpose of this report is not to make specific recommendations, several key themes have emerged from this process (see the key points under each section) which will help guide the next steps of the project – embedding future action in real insights gathered from stakeholders.

There is much work to be done, and ongoing engagement with the wider inshore fisheries community will be key. This is not a project focused solely on quick wins, and the Steering Group fully understand the difficult journey ahead. Success will mean that we have collectively determined the optimal settings and the package of tools that can be applied to deliver a world-class inshore fisheries management system – capable of ensuring our fisheries, our marine environment and our coastal communities are sustainable and thriving.



Appendix 1

Conference Feedback Survey Results

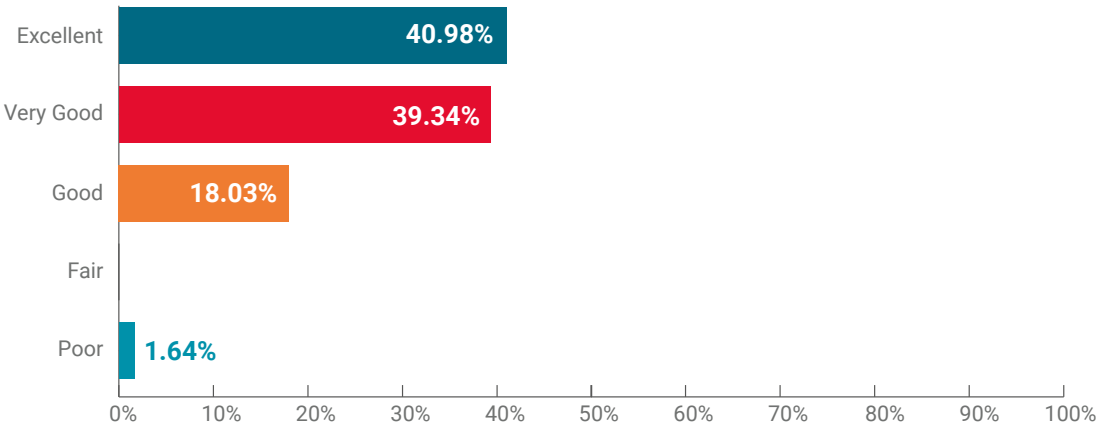
Response rate

The survey **response rate was 35%**, 61 out of approx. 175 delegates (excludes Seafish staff) responded to the survey.

Overall perceptions of the event

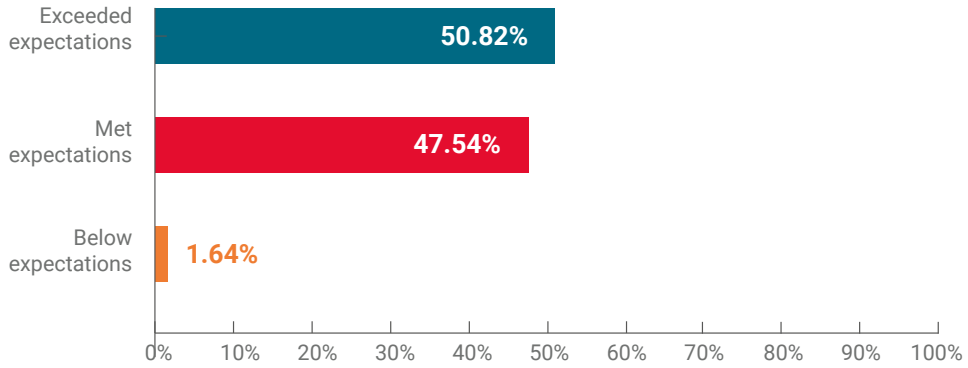
80% (n=49) of respondents rated the event as either **'very good'** or **'excellent'**.

Overall how would you rate the event?



The event was received well by respondents, **51% (n=31)** stating that it event **exceeded their expectations.**

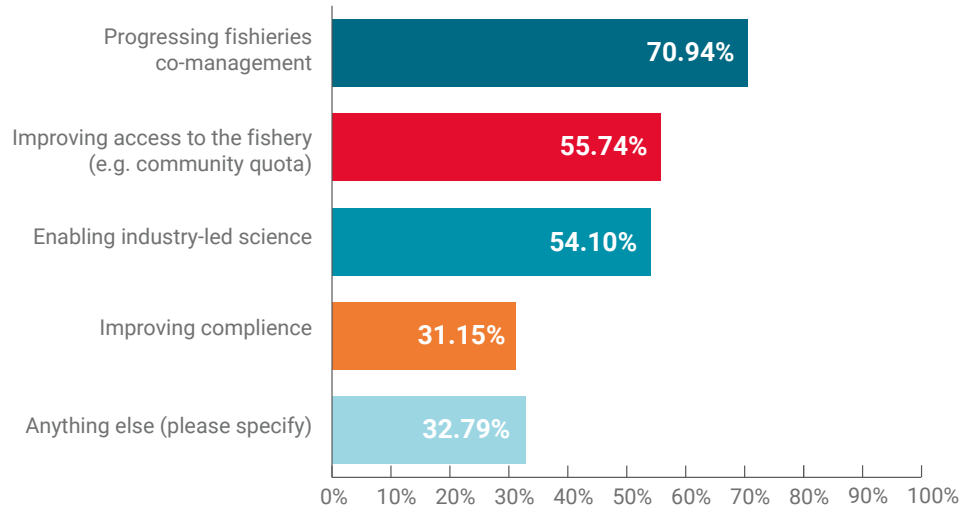
How well did the event meet your expectations?



Priorities for next steps

Respondents were asked what the priorities for the next steps should be (individuals could select more than one option). **Progressing fisheries co-management was a top priority** for respondents, with **70% (n=43)** of respondents selecting this option. **Improving access 55% (n=34)**, and **enabling industry-led science 54% (n=33)** were also high priorities.

What do you think our priorities for the next steps should be?



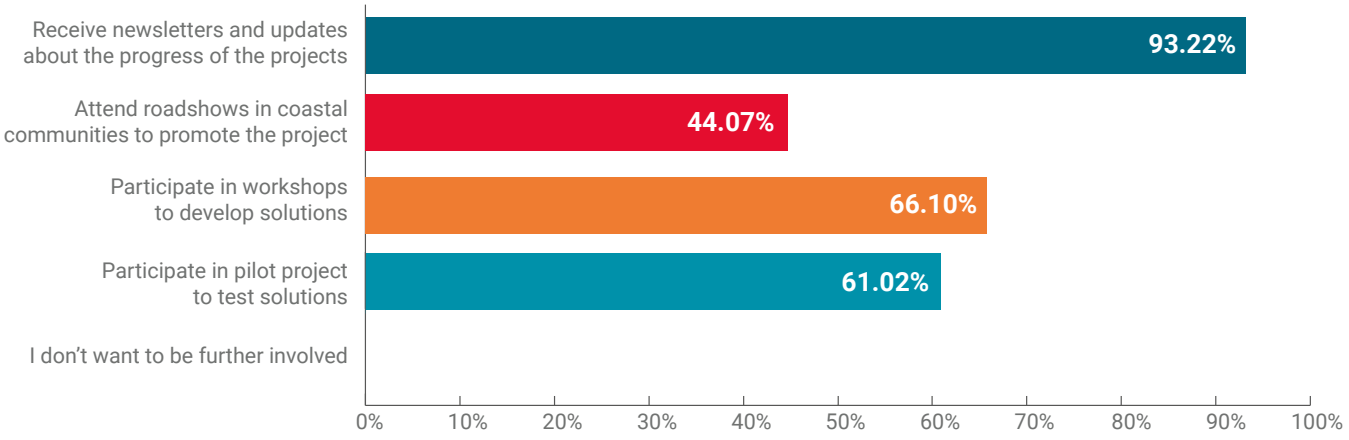
Other priorities suggested under 'anything else' included:

- Stakeholder involvement, inshore fishers representation
- Regional/tailored approaches
- Defining 'inshore'
- Preferential access for sustainable fishing methods
- Vessel decommissioning to remove latent capacity
- Holistic/integrated ecosystems approach
- Spatial conflict
- Regulatory framework/structure
- Safety at sea

Future involvement

All respondents want to remain involved with the project going forward to some degree. **Almost all (93%)** want to receive **newsletters and updates**. About **two third want to be actively involved** in future stages, either by participating in **workshops to develop solutions 66% (n=39)** or **pilot projects to test solutions 61% (n=36)**.

To what extent would you like to remain involved with the next steps of the project?



Appendix 2

Facilitators Discussion Questions

While discussions during each theme were free flowing, inspired by the theme and the presenters facilitators were given the following questions to help guide discussion if it stalled.

Theme 1 Discussion Questions

1. When the term 'Inshore Fisheries' is used, what does it mean to you?
2. What benefits are created by the way we currently define inshore fisheries?
3. What problems or issues are created by the way we currently define inshore fisheries?
4. How should recreational fishing (or 'angling') be accounted for in inshore fisheries management?
5. If we choose to manage our fisheries based on total fishing mortality (regardless of where that mortality occurs) do we still need to formally define our inshore fisheries?
6. How might we want to define 'Inshore Fisheries' in the future?

Theme 2 Discussion Questions

1. What do you think about co-management?
2. Have you any experience of fisheries co-management in action? Did it work?
3. What are the opportunities and the challenges that co-managing our inshore fisheries could create?
4. Who should be involved in co-management:
   a. Fishing industry and regulators only;
   b. Fishing industry, regulators, recreational sector, environmental community and other marine users?
5. It can be challenging for government to engage effectively with multiple organisations which often have different expectations and mandates:

a. Is the inshore fishing industry ready to participate in co-management? *(it would be useful to test views on whether participants think that the inshore fishing sector has sufficient/appropriate representation to engage effectively)*

b. What might need to change?

c. What role should regulatory agencies play in enabling the inshore fishing industry to engage in co-management?

Theme 3 Discussion Questions

1. In your opinion, what factors lead to spatial conflict?
2. Have you experienced spatial conflict – what caused it and how was it resolved?
3. Thinking about your own experiences what helps, or could help, to avoid competition for marine space escalating into a conflict situation?
4. What would you like to see happen to help avoid or address spatial conflict issues that is not currently happening?
5. How important is compromise in addressing spatial conflict?

Theme 4 Discussion Questions

1. How well do current arrangements allow the inshore fishing sector to 'access' fishing opportunities? What is not working so well and why?
2. Different allocation methods exist for quota and non-quota stocks – is this a problem?
   a. What issues does it create?
   b. What benefits does it deliver?
3. How do you think fishing effort should be managed for inshore fisheries? *(Possible options include: days at sea, individual quota, gear/fishing vessel size restrictions etc.).*
4. What factors should we take into account when deciding on the best approach? *(Possible options include: coastal community needs, equity, best return to the UK from a public resource, long-term stock sustainability, potential for reduced fishing effort etc.).*
5. What are your views on current levels of fishing capacity in the inshore sector (active and latent)?
6. What currently happens if fishermen try to act responsibly and commit to long-term sustainable management measures e.g. voluntarily agreeing to not fish in certain areas, or reducing their fishing pressure such as using fewer pots/creels.
   a. What could be done to address these issues?
7. What does business certainty mean in an inshore fisheries context? Would fishermen operate differently if they could be certain that they would continue to have access to a share of the resource?
8. Should fishermen contribute to the cost of managing their fishery in return for certainty of access?

Theme 5 Discussion Questions

1. How important is an effective compliance system to delivering healthy and sustainable fisheries?
   a. Note: By effective compliance system we mean rules (voluntary or regulatory):
   - that can be understood by participants;
   - that don't create perverse incentives,
   - where adherence to the rules can be effectively observed and monitored;
   - where there are mechanisms in place to encourage voluntary compliance, but there is also the ability to formally enforce the rules if required; and
   - where there is an appropriate penalty system to create an effective deterrent).
2. What does a good compliance system look like? Can you share examples?
3. Thinking about how fisheries are currently monitored – what is working well? What is not working so well?
4. What role do fishermen have in encouraging other participants to comply with the rules? How might they do this?
5. Should compliance just focus on regulations and government enforcement? What other methods might exist?

Theme 6 Discussion Questions

1. Thinking about science (data collection and research) in our inshore fisheries, what is working well and what is not working so well?
2. Can you share examples of where the inshore fishing industry has actively participated in the science process? What was the result – what worked/ what didn't work so well?
3. In your opinion what are the advantages/ disadvantages of industry being directly involved in data collection and research? How do you ensure the quality and robustness of the data collected?
4. What needs to happen to encourage fishermen to more actively engage in data collection and research?
5. What role does government and the wider research community have in enabling industry-led science?
6. What needs to happen to enable industry-led science to work effectively? *(picking up on the points from David Middleton's presentation)*
7. Should the inshore fishing sector contribute to the cost of research in inshore fisheries?

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