



Developing a participatory approach to the management of fishing activity in UK Marine Protected Areas

WORKSHOP 1 - OUTPUTS

NFFO / JNCC

Developing a participatory approach to the management of fishing activity in UK Marine Protected Areas

Workshop 1 - Outputs

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1 Introduction

A multi stakeholder workshop was held on 15th November 2018 in London to initiate the process of developing a participatory approach to the management of fisheries in UK Marine Protected Processes.

The primary aims of the workshop were:

- To set the scene and seek to achieve a shared understanding of the project objectives and proposed regional activities;
- To discuss and agree the objectives and principles of the project and the wider adaptive management MPA process with all parties; with the aim of improving the likelihood of the two regional groups following a consistent approach through subsequent work;
- To ensure everyone understands the process of adaptively managing MPAs;
- To ensure everyone understands the development of the ecological model and its uses;
- To ensure everyone understands the aims of the management toolkit and how they can contribute to it.

The outputs of the workshop are summarised in this report. They will be used in the development of the process and the project itself and to inform the next set of workshops.

1.1 Our approach

The outputs were gained through a series of discussion sessions, whereby questions were addressed and discussed, facilitated by independent facilitators. The participants were divided into three discussion groups, ensuring a good spread of the different stakeholder groups at each table. Representatives from the project partners sat at each table to answer project specific and regulation questions.

1.2 Report structure

Sections 2 and 3 of this report provide details of the workshop participants and a summary of the key outcomes from the workshop. The remainder of the report is set out according to the workshop sessions and specific questions asked. Responses have been compiled according to common themes that arose in the discussion. This report is not an analysis of the outputs but a representation of everyone's input to the discussion, highlighting key themes that arose from those discussions.

2 Workshop participants

Name	Organisation	Stakeholder category				
		Fishing industry	Conservation / NGO	Scientific / research	Other industry	Regulator
Project partners						
Rachel Bower	JNCC					X
Lawrence Browning	Natural England					X
Alice Cornthwaite	JNCC					X
Lowri Evans	Bangor University			X		
Victoria Morgan	Marine Management Organisation					X
Mike Quigley	Natural England					X
Heidi Richardson	Natural England					X
Viv Roberts	Marine Management Organisation					X
Dale Rodmell	NFFO	X				
Jenny Shepperson	Bangor University			X		
Declan Tobin	JNCC					X
Project Advisory Group						
David Reeves	Defra					X
Rowland Sharp	Natural Resources Wales					X
Antony Viera	CRPMEM	X				
Stakeholders						
Emily Baxter	North West Wildlife Trusts		X			
David Chambers	Norfolk Independent Fisherman Association	X				
Kenny Coull	North Sea Advisory Council	X				
Euan Dunn	RSPB		X			
Melanie Hartley	North-Western IFCA					X
Jason Parker	Northern Ireland Fish Producers Organisation	X				
Bex Lynam	Yorkshire Wildlife Trust		X			
Stephen Thompson	Eastern IFCA					X
Will Wrights	Kent & Essex IFCA					X

3 Key outcomes of the workshop

The following table captures a summary of the key outcomes of the workshop.

For this project to be seen as successful, by the end we will have...	<ul style="list-style-type: none"> • Cooperation between stakeholders • Effective monitoring • Good communication • Effective management • Respect for legal requirements
The principles that should guide our participation in this process are...	<ul style="list-style-type: none"> • Communication • Shared understanding • Respect for the process • Site specific considerations
The information we need to support us in this process is...	<ul style="list-style-type: none"> • Site specific information • A better baseline understanding of current legislation and the roles and responsibilities of regulators
The trends and changes that we need to be aware of are...	<ul style="list-style-type: none"> • Activities within MPAs • Legislation / policy • Technology • Commercial factors • Public awareness • Environmental factors
The types of knowledge we will need to inform participatory knowledge are...	<ul style="list-style-type: none"> • Ecological • Maritime • Fishing • Legislation • Research • Site specific • Survey outcomes
The circumstances that might trigger a meeting to review management might include...	<ul style="list-style-type: none"> • New information • Change in activities • Circumstantial change (e.g. environmental)
The barriers to effective engagement in participatory MPA include...	<ul style="list-style-type: none"> • Meeting logistics • Poor communication • Stakeholder perceptions
Solutions to these barriers include...	<ul style="list-style-type: none"> • Clear benefits to the stakeholders • Good communication • Clear agreements • Building relationships • Accessibility to meetings and decision making
In order to better participate in decision making we need...	<ul style="list-style-type: none"> • Information • Accessibility
The key principles that should guide our participation in MPA management are...	<ul style="list-style-type: none"> • Clear objectives • Ownership • Effective processes • Good communication

4 A vision for MPAs

On arrival participants were asked to contribute to a 'graffiti board', responding to the following:

Imagine a point in the future where the participatory management of fishing activity in MPAs works really well. What would that look like?

- Evidence based with primary core function - environmental protection
- Monitoring is key - currently not fit for purpose
- Based on sound evidence
- Fully funded monitoring programme - beneficiaries pay?
- Broad stakeholder involvement, ensuring all voices are heard
- Simple, user friendly and accessible tool for all stakeholders
- Fishermen must be involved in decision making for it to work - Under 10 is low impact
- Management has legitimacy and acceptance among stakeholders
- All MPAs designated are well managed and achieving conservation objectives
- The MMO and conservation organisations working together with fishermen and other stakeholders through a management approach, and transparent consultation
- Accessible and transparent
- Early stakeholder engagement
- Trust in the regulatory process
- Contribution of social and economic aspects during early engagement
- Fisheries are sustainable, productive and supporting vibrant fishing communities
- All components of the human/nature ecosystem working in harmony, including fishers, managed based on effective application of fit for purpose data
- Management is inclusive of resource users' needs
- Based on evidence that everyone trusts

5 This project

5.1 For this project to be seen as successful what will we have at the end, that we don't have now?

Co-operation

- Everyone working together
- Effective participation
- Shared understanding and buy-in, recognising the need for compromise

Effective monitoring

- Monitoring that is robust and effective, with as much information as possible within the bounds of resources available
- Ways forward about understanding impacts
- Data accessibility and consistent level of access to it

Good communication

- A communications process that takes account of understanding and expectations
- Effective stakeholder engagement and understanding

Effective management

- Good management as opposed to just bans
- Confidence in how evidence is used in decision making, which translates to a fair and supported management system
- A balanced approach
- Measurable targets (quantitative where possible)
- Future proofing of plans
- Better understanding of the research needed to inform management

Respect for legal requirements

- Conservation objectives are sacrosanct; legal requirements are crucial to avoid 'paper parks'
- Agreed balance between preservation and utilisation

5.2 What principles should guide our participation in this process?

Communication

- Information to be communicated in Plain English
- Open communication involving all those for whom it is relevant

- We need to come back to a local level – fishers do not have time to engage (or they have tried to but feel they haven't been listened to)
- Balance between technical detail and simplicity
- Use existing channels such as Fishing News, IFCA meetings to contact fishermen
- Go through the chairman of each of the associations so they can gauge member's views
- Take a step back from the process and think about how to communicate information and decisions more clearly to people who haven't been closely involved in making them

Shared understanding

- Shared ownership of information
- Understanding of baseline management needs, e.g. proportion of site requiring protection
- Manage expectations of the process

Respect for the process

- Everyone should respect the outcome of the process

Site specific considerations

- Considerations need to be site specific
- Be clear about the differences between the sites

5.3 What information do you need to support you in this process?

Site information

- Matrix of sites types and context re. legislation, designation and proposed management
- Information should be site specific
- Clear conservation objectives that are measurable and unambiguous

A better baseline understanding

- Current legislation and the roles and responsibilities of regulators should be mapped out in a succinct and accessible form
- Need to ensure understanding of proportionality, precaution, uncertainty and evidence; and how these interact

6 Scoping the context of participatory fisheries management in MPAs

6.1 What is your understanding of the existing regulatory framework relevant to MPA management?

Complexity of the current regulatory framework

- Current regulatory framework is not well understood by the fishing industry
- It is difficult to understand legislation and how it all links together and who does what
- Equally, there is a feeling from regulators that stakeholders often don't fully understand scope of their remit and who does what.
- Streamline legislation to aid understanding but avoid dilution – organisational remits can then be aligned to this
- RACs might be a good structure for better understanding of regulatory framework – currently different emphasis between RACs on MPAs
- Need better join up and alignment of organisational remits AND regulation that allows / enables this
- At Defra level, have a more holistic view

Different legislative drivers and mechanisms identified

- Common Fisheries Policy
- Marine and Coastal Access Act
- Marine Statutory Framework Directive
- EU Habitats and Birds Directive
- Inshore/local byelaws
- OSPAR
- Protected species legislation
- SSSI
- Other regulations that have an impact on MPAs, e.g. pollution, shipping, safety, EIA, SEA
- Policy/shared ambition, e.g. 25 year environment plan

Communication

- Regulatory bodies should communicate in a language that fishers will understand
- There is a perception that fishers are always the last to know things.
- Timely communication of management, closures, openings etc.
- When communicating to the fishing industry the messenger needs to be someone who has, or is able to secure, respect and needs to be able to communicate the regulations in Plain English
- Importance of building trust with stakeholders

6.2 What are the trends and changes we need to be aware of that might affect regulation?

Activities within the MPA

- The busyness of the marine areas - more competition for use
- Displacement of fishing activity by increasing number of new users such as renewables, e.g. windfarms, tidal lagoons etc.
- Changes in fishing practices
- More users lead to a more complex stakeholder environment
- Examples of best practice

Legislation/policy

- 25-year plan is moving towards a more ecosystem based approach (rather than species of fish stock based approach)
- Brexit
- Fisheries bill will bring changes, including greater powers for MMO and equivalent in devolved administrations.
- Ability to licence access to foreign vessels
- Introduction of management measures – will be more streamlined
- Taking a long time for offshore sites, issues re Joint Recommendation process, dependent on withdrawal bill and common fisheries policy
- What impact of international law of the sea?
- If byelaws powers are extended, with a broader remit, will need to prioritise.
- Legal cases / decisions

Technology

- New data/information

Commercial

- Markets
- Funding

Public awareness

- High profile cases
- Incorrect PR
- TV, e.g. David Attenborough

Environmental

- Climate change

6.3 Who should be involved in participatory management of fisheries in MPAs and why?

A range of stakeholders

- Fishing industry:
 - Fisheries Association Chairs/Fisheries reps (self-identifying!) – fishermen don't have time to engage or don't trust government departments.
 - Individual fisheries
 - Recreational fishermen – hobby fishers, charter boats
 - Trade bodies
 - NB: Inshore fishers are easier to identify than offshore – harder to work out what fishers are affected offshore. Need to consider it on a site by site basis for offshore fishers
- Crown Estate
- Expert NGOs (but not all community groups)
- Research/scientific advisors
- Conservation bodies
- Marine technology sector (particularly when dealing with site specific issues)
- Regulators (e.g. marine planners)
- Advisory committees
- French – Western channel heavily fished by them, contact has stopped because of Brexit – need to contact French Gov.
- Other marine users e.g. other industries

Communication with stakeholders

- Clearly explain the reasoning behind decisions
- Re-define the meaning of "expert" to be more inclusive....is expert even a good word to use?
- Think about methods of engagement.
- Consider how we bring dialogue down towards site level and include relevant "on the ground" representatives/users
- Currently, stakeholders can contribute but this might not always be reflected in the implementation
- We all need to understand participation is about sharing understanding and developing solutions but comes with no "policy guarantees"
- Use of social media can be helpful, e.g. use of Facebook groups of international fishers discussing issues with English/Irish fleets
- We may need to consider moderation of online discussion
- It is perceived by fishermen that measures are often implemented without discussion. Regulator response: We do listen to everybody but can't necessarily give everybody everything they want.

- Regulators should explain their reasoning if people don't get what they want
- Reasoning – provide clear information on why management is needed - give fishers a good reason to attend these sort of sessions
- EIFCA – Community Voice process has been very successful in engaging stakeholders
- There is currently a lack of trust - IFCA pass bylaws but the fishermen don't know about it and therefore don't trust the IFCAs
- There is a communication issue when using terms like "reef" as this conjures up a specific image of a tropical reef. Regulator response: we're constrained legally as there are specific definitions, but we can be better at communicating what exactly we mean and what a feature is

6.4 What types of knowledge and data will be needed to inform participatory management?

- **Identification of required data**
 - Involve fishers in identifying what data is lacking, and how best to target resources in data collection
 - Inshore fishers have helped IFCA identify sites, ground truthing, but need to ensure that the gear they use provides reliable data
 - Involve all in setting data standards/expectations so that data collected is of value
 - data to be fit for purpose (i.e. on which management can be based) rather than necessarily being 'gold plated'
- **Ecological**
 - Needs to be site specific if possible
- **Maritime**
 - Coastal processes
- **Fishing**
 - Industry knowledge
 - Site specific
 - Vessel monitoring
 - Gears being used
 - Who is fishing where
- **Legislation**
 - Understanding of legislative framework
 - Regulation
 - Enforcement
 - Understanding of how regulations are being actioned
- **Research**

- Social science and economics
- **Site information**
 - Protected features
 - Quantitative information
 - Impact of fishing on features
- **Survey information**
 - Made publicly available

7 Key concepts of environmental decision making: Risk, Proportionality and Precaution

The precautionary principle means don't do something to the environment if you don't know the effect it will have, proportionality means this idea should be applied in a proportional way - when it matters - and not used as a tool to stop everything. The assessment of proportionality is based on factoring in risks (likelihood of something happening, the magnitude of impact if it does, and the reversibility of the effect).

These concepts can be applied well to support wise decisions... or not

7.1 What experience do you have of applying the principles of precaution and proportionality?

Levels of understanding

- For fishermen there is lack of understanding of why sites are designated and the importance of understanding fishing impacts in the context of all activities that might interact with a given site
- There is a need for fishermen to understand the complex interaction of fishing gear with the environment and not just the relationship with fish stocks.
- There needs to be a better understanding – particularly amongst the fishing industry - of how the risk / precautionary principle is applied
- There is a general lack of understanding of decision making, re fishery stock management, amongst non-specialists
- We need to accept / embrace complexity but acknowledge the limits of data and other forms of knowledge
- We need to ensure the law is complied with, and reach a common understanding on data needed, and the requirements of the law

General

- When developing the model, we need strict definitions, and agreement on these, e.g. binary or % coverages. This also applies to agreeing the level of certainty.
- We need to take both principles on board
- Principles are used in other industries, but not so defined in fishing – more dynamic, easy to 'not know' – do we need to create tests for applying the principles?
- Greater understanding of MPAs may permit lesser use of precautionary principle
- Applying these principles is just another form of control
- When there is no reason for restrictions it doesn't make sense
- Displacement – introducing measures in one area might displace efforts to other areas and cause further damage.

Evidence

- It is important to recognise different types of evidence – activity, ecological, enforcement evidence, triggers etc.
- Knowing how far you need to dig into the evidence base if you are genuinely interested in balance
- Combined evidence can be strong but individual pieces are not necessarily very strong

Precaution

- Precautionary principle means different things to different people, with NGOs thinking management is not precautionary enough, fishers questioning whether it should be applied at all
- It is costly to apply precaution in the marine setting - can't measure features/stocks as dynamic
- Some feel that if you can't completely rule out uncertainty you need to stop activities, others don't agree with this definition of "precautionary"

Examples of application

- Lune Deep SAC was identified as a good example of how a participatory approach can lead to improved management of risk and fishing practices – there is a risk around potential impacts on reef. Lune Deep is a submarine canyon. The feature is a rocky reef along the top of the canyon. A few boats were bottom trawling in the site. The matrix said the interaction was red risk. Proportionality was applied – the local IFCA discussed byelaw with fishermen, who wanted to target the bottom of canyon (non-feature area). There was a refined understanding of where fishing was occurring – they were trying to avoid reef because it would snag gears. They introduced a grandfather clause in the byelaw so that experienced skippers who knew the site and could fish it without damaging the feature could continue to do so. There is an agreed permit approach due to the skills of fishermen to fish adjacent to the reef but not on it. It requires trust between parties involved; effective dialogue; confidence in evidence (amongst all stakeholders); training (of fishermen) in data collection; and demonstration by fishermen of ability to avoid damage. Pragmatism and ability to control via permitting critical. It was a successful outcome which led to little change on the ground for existing fishers, and a good outcome for the protected features.
- Dogger Bank - There was a lack understanding of how to apply evidence to decision making process. Difficult to apply consensus because the same evidence can be used to support different outcomes.
- Scottish experience of bringing in experts to inform discussion of the review of specific features/species. Created a group understanding/agreement of baselines.
- NFFO commissioned work on three sites and did a shadow risk assessment.
- WLT suggest revised approach to fishing in MPAs; it is a traffic light system. Red outcome = fishing activity stopped immediately, with opportunity to revisit the decision in future. "Amber" outcomes – interactions and impacts of fishing are less well understood. Tend to be sedimentary habitats where fishing activity is more likely to be occurring.

Regulatory requirements

- Lots of case law within Habitats Regulations, legal opinion very helpful to understand how to apply. Different law applies to MCZs and EMSs.
- For example, looking at protecting chalk reef, which is dynamic, deciding which parts to protect, case law gives you a starting point, agreed baseline/interpretation.
- IFCA have statutory obligations, hold management meetings, report on stock numbers and location. Formed specific advisory groups based on species/site.

7.2 What implications do these principles have for participatory decision making and Adaptive Risk Management and how might they be factored in?

- From the fishermen's perspective there are cost implications as fishers need to go further afield, or important areas are restricted. Industry has diversified. Having to apply these principles is another form of control. It comes back to providing reasons again.
- It is difficult when there is uncertainty about impact – you will never totally remove uncertainty
- The concept of risk
- When evidence is disputed and the stakes are high it comes down to conservation vs impacts, e.g. North Norfolk coast site - there are no alternatives to fishing, the entire industry is at stake
- Can you ever rule out scientific uncertainty?

7.3 What thoughts do you have at this stage about what circumstances should trigger a meeting to work out solutions and review management?

New information

- Monitoring of certain factors, new information e.g. from scientific survey, fishing effort changes
- When significant new data emerges (noted that it can be difficult to assess significance)
- New information about the feature or about the impacts
- Information about disease, or the impact of warming
- Anticipated information vs ad-hoc

Change in activity

- Increase in number of vessels
- Change in type of activity

Circumstantial change

- New policy / law

- Big storm / natural event impacting on features

Additional things to consider

- How do we trigger a reconsideration of management? What constitutes evidence that is significant enough to justify a review/revision of management?
- Important that decision making allows time for adaptation of practice and business cycles to allow people to plan for and accommodate change
- Concerns that this approach could end up with unforeseen restrictions on industry – if you restrict one type of fishing, people might invest in others which could then be restricted in future. Could increase sectoral conflict within industry.

8 Setting the scene - case study sites

8.1 West of Walney

8.1.1 What are the key conservation habitats and features for this MPA?

- Sub-tidal mud
- Sub-tidal sand
- Sea pens and burrowing mega-fauna
- Features are mobile – sandbank and reefs
- Static gear area covers part of the MPA

8.1.2 What else do we know about these sites beyond what is in the information sheet? Have we missed anything in the information we have provided?

- It is a good case study site, as there are lots of existing activities, but monitoring is an issue
- The site is co-located with a wind farm
 - The wind farms were there first (some of them anyway)
 - The presence of the windfarms informed the location of the site: owing to the restrictions on fishing associated with said windfarms.
 - Windfarms are having an impact on coastal processes and features – need to access local knowledge about this
- The site crosses 3 regulatory boundaries: MMO / IFCA and Defra (but MMO is leading and it is assumed that this will minimise the potential for dispute)
- Part of site is not covered by by-laws
- The main fishing fleet active in this area is based in Northern Ireland BUT the site is also used by fleets from Maryport and Whitehaven.
- Change of direction of commercial vessels, leading to fishing being more concentrated
- It is an important area for nephrops
- Other uses of the site will continue
- We need to consider the unintended consequences of management measures, such as change in fishing behaviour

8.1.3 What is the broader context for the MPA here: economic, social, cultural, environmental?

- In general, we only have poor levels of data for this site.
- Site status is 'recover'
- Co-location with renewables could generate conflict between fishing and biodiversity priorities

- There may be opportunities for fishery diversification. E.g. introduction of creeling for nephrops and potting, but it is uncertain whether or not this is viable. NE are currently conducting some research into this matter
- There are some opportunities for fishermen to support windfarm activity but it is not known how significant an opportunity this is
- There is a local community fund (supporting communities in Whitehaven and Maryport) but it is not clear how significant this is
- NB Current fishery restrictions have been proposed – a new bylaw is expected which will prohibit the use of bottom towed gear
- Fishing may be displaced from the area if regulations are tightened.
- Fleets at Maryport and Whitehaven are dependent upon this site. Boats are too small to simply move to another fishery

8.1.4 What information would you want if you were undertaking a review of the site?

- In general, the site is data poor
- In general, better sharing of information is required
- We need more information on the impact of windfarms on biodiversity, including fish stock – information on long term impacts in particular is key!
- Need information / understanding of how sensitive the site is and the impact of current activity on its recovery
- Regular feedback needed on changes to the site – this could come from monitoring and local knowledge
- Funding monitoring is a challenge, it could involve the industry, it could be part of their conditions, but would need to be ground-truthed.
- Difference between impact monitoring and ecological monitoring (scientific)

8.2 North Norfolk Sandbanks

8.2.1 What are the key conservation habitats and features for this MPA?

- Characterised by mobile sediment. Sandbanks are a feature.
- Reefs formed by *sabellaria* – comes and goes “ephemeral”. Not like the great barrier reef – this is a communication issue
- The reef provides a habitat for other things to live on
- Annex I habitats

8.2.2 What else do we know about these sites beyond what is in the information sheet? Have we missed anything in the information we have provided?

- Reef is “red risk”
- Sandbank is “amber risk”

- Because reefs are ephemeral they need ongoing monitoring to establish whether a feature is reoccurring or not, but it is difficult to monitor (funding)

8.2.3 What is the broader context for the MPA here: economic, social, cultural, environmental?

- It's a busy site – a good case study for building knowledge!
- There is management proposed – zoned restriction
- Static gear area down in the deeper areas.
- Lots of other activities occurring – e.g. oil and gas, windfarm – this has had an impact on fishing activity in terms of spatial distribution and direction of tows etc, and will also influence currents, sediment etc.
- There is lots of activity by the Dutch fleet – will this change post EU exit?

8.2.4 What information would you want if you were undertaking a review of the site?

- Regular feedback is needed on changes to the site – this could come from monitoring and local knowledge
- Funding monitoring is a challenge, there is a possibility of industry contributing to monitoring – conditional access? Some argued this should be kept independent, others suggested that information could be supplementary to build up a better picture of the site. This would need to be ground-truthed
- The types of fishing, where it's happening and its impact and how this changes
- Issue of displacement to other gear types/areas – it is difficult to predict but can we discuss this as part of the process to understand what might happen and how industry can maintain their income/diversify in ways that are compatible with achieving conservation objectives

9 Taking a participatory approach to fisheries management in MPAs

9.1 Thinking of participatory processes, you have been in before, what worked well that we can learn from in this process for MPA management?

What worked well

- Dogger Bank North Sea Advisory Commission (identified as an example of good practice, although noted that whilst the process was effective the outcomes were not). EU wanted NGO/Fishers consensus in order to build confidence in management outcomes – mapped out areas of equivalent biodiversity value but different socio-economic implications. Participation in mapping interests was very inclusive for fishermen. There was a level of accommodation between different stakeholders and regulators over which areas should be open/closed. Subsequent engagement with process through Advisory Committees is much more constrained in terms of level of input. Looked at different management scenarios to consider trade-off, but got bogged down! There was a lack of defined boundaries for the process. Strong terms of reference are needed for this type of process and a good facilitator – people coming to the process are willing to contribute information and not to negotiate from an entrenched position. It was noted that attitudes are different offshore to inshore.
- Voluntary approaches need to be considered, e.g. South Devon Potting Agreement example – driven initially by gear conflict resolution
- Lune Deep SAC example – discussed measures with those who would be affected by them
- IFCA Community Voice – have had success, but it needed lots of commitment and resource, but more effective than a tick box exercise as the industry felt they were listened to. Learned about communication – communicate in terms that people are familiar with and can understand.
- Defra engagement processes for advisory councils - having a level of input into decision making

What didn't work well

- Need to remember that peoples' past experience of participatory approaches has not always been positive and in some cases have generated mistrust within the fishing industry and disappointing outcomes for Government and other bodies.

Lessons to be learnt

- There is a need to learn from past experience including both successful and unsuccessful projects
- When approaching an exercise and in particular dealing with stakeholders which are known, or suspected, of harbouring 'hardened attitudes it is worth looking back to establish the history of such attitudes, why they came about, who was involved etc. How do we re-wire that conversation and rebuild trust?

- Local understanding of agency staff and local networking is important.
- Regulators need to better understand socio-economic implications of management
- Offshore fishermen are more politically engaged and open to an ARM approach
- There need to be incentives for people to engage, i.e. they will clearly benefit in some way
- Provide examples of where a participatory approach had delivered tangible benefits that could work in a 'real world' scenario
- Need some sort of structure, communication at the right level
- Define the bounds of the possible and set limits on remit and feasibility
- Early comms and managing expectations is important
- Be transparent and clear with definitions, expectations and data availability
- Involving the right people – those that are directly impacted
- Recognise the scale of involvement needed, providing mechanisms for international engagement if necessary
- Set standards for data collection
- Accessible/targeted communications
- Effective use of social media
- Provide a feedback loop – reporting what has been done – on measures, effects and ongoing monitoring
- Participation is dependent on a regulatory process
- Important to give adequate weight and credence to fishers input, particularly around socio-economic data

9.2 What are the barriers to effective engagement in participatory MPA management?

Logistics

- Stakeholders are unable to attend meetings at given times and locations
- Stakeholder engagement is time consuming and resource intensive, when resources are limited

Communication

- Mis-understanding of purpose
- Lack of clarity about red lines
- Difficulties in agreeing definitions on precautionary principle and proportionality
- Managing expectations - make sure participants understand what can be achieved and what the feasible outcomes are
- Getting in touch with the right people in the right way
- A key issue is trust and respect between stakeholder groups, especially fishers and NGOs –processes like this break down these barriers to engagement

Stakeholder perceptions

- Pre-conceived ideas – open-mindedness needs to be a pre-requisite.
- Poisoned by previous experience
- Perceived inequalities between restrictions on fishing industry and licensed activities
- Cultural differences between countries

9.3 How can these barriers be solved?

Clear benefits

- Need to make the likely benefits of participation, to participants, clear.
- May need to offer incentives to secure participation, e.g. cover cost of expenses etc
- Address financial barriers by paying a day rate to attend meetings

Communication

- Useful to 'warm up' participants prior to an event
- Use appropriate communication method
- Communicate logistics early
- Get commitment – be clear about what level of input will be needed
- Provide enough background info – e.g. frameworks and limits we're working within
- Be clear about level of input/commitment required
- Be clear about red lines
- Use social media with proper moderation for more focused engagement on specific issues
- Keep it science-based but listen to opinions

Clear agreements in place

- Have clear set of aims and objectives, roles and responsibilities.
- Manage expectations
- Define limits of decision-making
- Terms of reference - clarity - don't set yourself up for failure
- Clear roles and responsibilities
- Prepare a management plan to give focus to discussion, setting standards, thresholds, agreeing key terms

Building relationships

- Meeting with stakeholders to understand key issues, start early to build trust
- Follow up meetings to build relationships

Accessibility

- Make sure meetings etc. are accessible
- Make meetings realistic - timings and locations
- Take the meeting to the fishing industry – choose the right location

- Need a wider range of stakeholders inputting into decision making and for more use to be made of local knowledge. When we meet ALL stakeholders they should be able to bring required information to the table

9.4 How might you better participate in decision making? What would that look like? How can that process be better enabled? What would you be willing to contribute to that process?

Information

- Full set of facts – knowns and unknowns, and hopefully discussion around level of evidence/confidence needed to inform decisions
- Need national oversight (consistency) vs site level
- Understanding of spatial resolution is important – need different levels of engagement depending on the spatial levels -e.g. when across countries

Accessibility

- Make meetings local / accessible

Contributions from stakeholders

- Ecological knowledge e.g. from surveys
- Industry knowledge e.g. locations of features, where fishing is occurring etc.
- Contribute to protection as well as running of industry
- Maintain the smooth running of fishing industry and true representation

9.5 Based on this discussion what are the key principles that should guide our participation in MPA management?

Clear objectives

- End goal is effective management
- Fit for purpose - has to achieve MPA objectives

Ownership

- Relevant stakeholders own the process, co-managed with regulators
- Regulator has final decision, with input and steer from stakeholders
- Clear terms of reference with buy in from participants

Effective process

- Transparency
- Evidence based
- Objective decision making
- Clear understanding of why decisions have been made
- Participatory and inclusive - everyone's opinion must be heard

- Commitment to the process

Good communication

- Agreed communication channels and procedures
- Feedback mechanism

10 Ecological model scenario generation

10.1 What will this model need to factor in for all stakeholders (not just ecologists) to have confidence in its outputs?

General feedback

- The model is a very useful starting point
- It has some value in guiding decision making
- It highlights the danger of displacement activity
- It is useful to consider recovery times as that might help consider how long measures might need before we would expect to see an effect
- It is good as a comparative tool to look at different management scenarios.
- We can't expect the model to answer everything, it's indicative. Still need to take a decision on what is acceptable.
- We would like more of an overview about what studies the model is based on.
- It is important to involve stakeholders in discussion on model development and how it is applied
- The model is not about establishing management, but can help inform discussions on adaptive management; these discussions are site-specific
- It can inform decision making but we need to be clear about its limitations.
- We need to be clear not just on how the model works, but what is its function within the project
- Question: what is being used as a baseline – are we hoping to help a site recover, or starting from present status – what data will be inputted?

To have more confidence in its outputs...

- Refined habitat and fishing data
- Species richness as well as biomass
- How much confidence can we have - excellent for an indication - but not 100%
- Need to consider displacement, the model could show this in action
- Model is guidance but will only take us so far. Need monitoring of feature condition to back this up.

10.2 What are the limitations of using modelling?

- The scale is a limitation - it treats trawls and sediments as the same.
- It doesn't encompass all species.
- Low confidence in the model as there's so much variation in habitat and gear type.
- Model should not be overly generic (the more site specific it is the better).
- Model should aim to consider what should be there, not just what is there.

- Smaller vessels don't have VMS – then missing 60% of boats (mostly an inshore issue)
- Depletion rates are habitat specific
- Recruitment both larval and local density driven; re-colonisation is complex and difficult to include in the model
- Question: does the interpretation of models need to be done by the person who built it?

10.3 Review the data layers proposed.... what else would you like to see included?

- Seines should be included as they are now proven as being more bottom contacting
- It is lacking baseline data
- Coarse scale – habitat and gear type data, but so you can refine inputs
- Finer detail in terms of gear and habitats
- Already significant error bars - more precision but less accuracy
- Would have liked to have seen something on species richness
- Body size – tells you about recovery of target species
- Socio- economic data – Bangor University has capacity to do this

11 Management toolkit

11.1 To maximise its usefulness what would you want this to contain?

- It should be aimed at more than just regulators. Also aimed at those who will end up in this process for real, in future. To help them understand how they can interact with the process, how they have their say, and what happens.
- Separate out the different aspects: information requirements vs process/governance.
- Include an acronym buster and list of definitions to ensure level playing field - a glossary
- Provide links/signposting to live stuff.
- What are the point(s) of contact for toolkit e.g. IFCA inshore.... what about offshore?
- Include flowchart(s) to illustrate how the process works.
- Ensure accessibility to all (hard copy and digital etc)
- Keep it short and simple. Don't have ten pages when one would do.
- Use Plain English rather than technical jargon

It was reiterated that this will be an ongoing discussion, so this is just first ideas and impressions/principles. We will feed into the management toolkit throughout the project.

12 Glossery

ARM	Adaptive Risk Management
MPA	Marine Protected Area
MCZ	Marine Conservation Zone – An MPA designated under national legislation
SSSI	Site of Special Scientific Interest – a type of MPA designated under national legislation
SAC	Special Area of Conservation – An MPA designated under European legislation
EMS	European Marine Site – term used to refer to MPAs designated under European legislation
RAC	Regional Advisory Council – stakeholder lead organisations that provide the Commission and EU countries with recommendations on fisheries management matters
OSPAR	The unified Oslo and Paris Conventions
SEA	Strategic Environmental Assessments
EIA	Environmental Impact Assessments
VMS	Vessel Monitoring System – a technology used to provide data on the location, course and speed of vessels
DEFRA	Department for Environment, Food and Rural Affairs - government department responsible for marine environmental protection, and fisheries in the UK
NE	Natural England - statutory adviser on nature conservation out to 12nm in English waters
JNCC	Joint Nature Conservation Committee - statutory adviser on nature conservation in the offshore area
IFCA	Inshore Fisheries Conservation Authority - responsible for managing the exploitation of sea fisheries resources within its area of jurisdiction
MMO	Marine Management Organisation - competent marine planning authority on behalf of UK Government
NFFO	National Federation of Fishermen’s Organisations – a representative body for fishermen in England, Wales and Northern Ireland.



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