

Fisheries Management and Innovation Group (FMIG)

Note of meeting held at Friends House, London. Wednesday 15 March 2023.

For the Fisheries Management and Innovation Group minutes and meeting presentations see: <https://www.seafish.org/responsible-sourcing/seafood-issues-groups/the-fisheries-management-and-innovation-group/>

FMIG in person meeting. Fisheries data and REM.

This meeting looked at the scientific and management benefits of REM and how it is currently being used. It also explored how we can use REM and advancements in Machine Learning (ML) and Artificial Intelligence to modernise the way in which we collect and manage fisheries data to enhance our scientific capability and knowledge.

1. Welcome, introductions, and apologies

Mike Park welcomed everyone to the meeting.

Attendees

*speakers

Amy Balding	Marine Management Organisation
Andrew Clayton	Pew Trusts
Chantal Lyons	Mindfully Wired Communications
Chloe North	Western Fish Producers' Organisation Ltd
Chloe Rogers	The FPO Ltd/ UKAFPO
Claire Dyer	Defra
Clarus Chu	WWF
*Colin Faulkner	Defra
*Dale Rodmell	Eastern England Fish Producer's Organisation
Dave Sampson	Ocean Prime Industries Ltd
*David Hill	Marine Scotland
*David Stevens	Crystal Sea
Ella Brock	Seafish
*Elinor Brett	Defra
Emily Bulled	Blue Marine Foundation
Emma Plotnek	Fishing into the Future
Fiona Birch	Mindfully Wired Communications
Gabriel Wanyoike	Kenya Marine and Fisheries Research Institute
Giles Bartlett	Whitby Seafoods
Grant Course	SeaScope Fisheries Research Limited
Hazel Curtis	Fishing into the Future
Helen McLachlan	RSPB
*Imogen Cessford	Defra
*Jason Bryan	Archipelago Marine Research Ltd
John Pearce	MRAG Limited
*John Reidar Mathiassen	SINTEF Ocean AS
Jonny Peters	Defra
Judith Farrell	HumberSide Fish Producers Organisation
Juliette Hatchman	South Western Fish Producers Organisation
Karen Green	Seafish (Secretariat)

Lauren Clayton
Linda Wood
Lisa Bennett
Lise Lauststen
Louise McCafferty
Manuel Menchaca
Marie Neal
Marcelo Hidalgo
Martin Arris
Martyn Jakins-Pollard
*Mat Mander
Michele De Noia
*Mike Park
Nicholas French
Phil Haslam
*Rebecca Skirrow
Rebecca Treacy
Rebecca Turner
Robert Enever
Rohan Allen
Sam Peacock
Shelley Vince
Steve Mackinson
Stuart McLanaghan
Teresa Fernandez
Tim Robbins
Tom Rossiter
William Davies

Marine Scotland
M&S
MSC
Danish Pelagic Producers Organisation
Joseph Robertson (Aberdeen)
Satlink S.L.U
Ystumtec Ltd
Fishing Industry Association of Papua New Guinea
Future Fisheries Team - Marine Management Organisation
Defra
Devon and Severn IFCA
NatureScot
SWFPA (Chair)
Marine Management Organisation
North Atlantic Holdings Ltd
Cefas
Seafish
Bangor University
Fisktec Marine
Defra
Peacock Marine
Welsh Government
SPFPA
Seafish
Hilton Seafood UK
RPS Group
SafetyNet Technologies
Sofina Europe / Youngs

Apologies

Charlotte Maddocks
Conor O'Kane
David Brooks
Estelle Brennan
Guy Pasco
Jane Sandell
Jo Pollett
Hannah Richardson
Pablo Torralbo
Liam Hawkes
Neil Witney
Simon Marr
Stella Bartolini Cavicchi

Foods Connected
MRAG
Seafish
Lyons Seafoods
Seascope Fisheries Research Ltd
FPO Ltd
MSC
Fauna & Flora
Satlink S.L.U
Defra
Fisher
Heriot-Watt University
OceanMind

Morning session. How REM is being used now

- [The Government and legislative position](#). Colin Faulkner, External Fisheries Negotiations & Trade Policy, Department for Environment, Food and Rural Affairs (Defra).
- [Devon and Severn IFCA REM project](#). Mat Mander, Deputy Chief Officer, Devon and Severn IFCA.
- [The picture in Scotland](#). David Hill and Lauren Clayton, Marine Scotland.
- [REM successes in the last 10 years - relationship building between industry science and fisheries management](#). David Stevens, Crystal Seas.

Discussion – panel session

- **Q. What is the biggest challenge? How do we get access to the data? Is it open access, what's the method for start-up companies?**
A. One of the biggest challenges is making VMS data available and transparent on a global basis. I should be able to access data for free with fishing industry. We know there are challenges and limits, and this is very much up for debate. The default position needs to be transparency, but there are limits to this, and the legal framework that sits around data management and we will be very keen to get this point right in particular. That data is useful for scientific purpose. It is important to hold industry to account and balance perspectives and recognise differences.
- **Q. I have picked up that this is for science and not enforcement. There needs to be compliance under different jurisdiction. Is it possible to link the two and in these timeframes?**
A. This is a big challenge, and many coastal states are developing their own system and their co-ordination, respecting that different parties take this forward. Monitoring control and surveillance are frameworks across. Huge challenge to get the balance right. The coordination forums are there and if you feel these are not being developed then please tell us.
- **Q. With regard to historical video footage already collected through the catch quota trials vessel owners are annoyed because they feel the data collecting wasn't used to inform science in the way they have hoped. There is the need for trust. I wondered if you had spoken to vessel owners and what they thought about the footage being used in a useful way?**
A. We haven't spoken to them, but one fisher has retired, and one has re-engaged and is working with us on another trial.
- **Q. What are the current plans for meaningful and constructive dialogue?**
A. In England we are working with early adopters and setting up workshops and structures for management. We want to have those conversations with fishers, with a clear structure on what we are going to work through, and the implications. We want to build together and learn lessons as we go. Scotland consulted last year and had significant responses. In Scotland there are forums to create a co-management approach. The conservation group we have established allows us to speak with NGO's and the input we get is appreciated. We have committed to a pathway to share. The EEFPPO had had a number of vessels in the scheme that ended in 2020. It was really successful in terms of commitment with members. It affected tactical operations; it took time for fishers to learn but they did. It demonstrated that cod was fully documented. It worked until it didn't which was due to incentives ending that is because cod TAC came down substantially. It is a tool, it's not an ending itself and only works in the operating system. It highlights the wider issues and trade-offs with MSY-based management and trying to minimise discards.

- **Q. What is the role in REM in helping with the measurements on board during the trials?**
A. During the camera trials, at the end of every trip, recordings were sent back to Cefas to check the size of the hopper and the overall weights, lengths and frequencies. At the end of season, a trip was conducted with observers, to look at the accuracy of the discard data and compare with REM to validate the data. Observers are needed to verify the data.
- **Q. With regards to privacy are there any data sharing agreements that could be extended to other vessels?**
A. There are processes in place with the companies and fishers involved. We can minimise intervention and need to get volunteers and ambassadors to encourage others to participate. We need to get across the assurance that the data is secure.
- **Q. Have the vessels been able to use the data to optimise the value of your catch and to benefit the business? Is there an opportunity to generate more value for pound of catch?**
A. Yes, we have a better idea of what you have caught and can demonstrate the catch is handled well, and these are relatively clean fisheries. Cost savings allow investment. We want this to be data-led which could lead to benefits, but the key is flexibility with some of the rules we have. We have got to supply the data to get this.
- **Q. The cod recovery plan showed that if the stimulus is there, fishers will adjust. But it needs to be clear what the monetary stimulation is going to be. We tend to make regulations without the scrutiny from fishers. If there is full scrutiny, do we need to think about the types of regulations we have in place and change them, or bolt on REM?**
A. Regulation and technology go hand in hand. If we want flexibility real time data will allow this to happen. This need to be set out more fully in the FMPs. The regulatory environment needs to evolve to reflect new initiatives, and our regulation and compliance also needs to be updated so we aren't just adding another layer of bureaucracy. The power of the market is important, some of what is going on is driven by consumers. Market share and market access could be dictated by the ability to document the catch. We have got to have FMPs that can effectively manage trade-offs. Management is crucial and this is not fully bedded in yet. Moving from voluntary to mandatory is a huge ask of industry. We should be sitting down to create a co-management approach, or it won't work. NGO, managers, fishers, science and Government need to be on same page.
- **Q. It is slightly depressing to hear we are talking about trials but encouraging to see we might get there. Why has it taken so long to get to where we are now?**
A. It takes so long because it is difficult, and a lot of different policy drivers need to be respected along the way. It would be simple to do a top-down approach, but we don't have the conditions to do that. Government loves top down, but they don't always work. Taking that approach can only make it worse. Its more important to get it right.
- **Discussion around how the data is, and should be, shared, and why it is taking so long.**
- It is good that Defra are using a co-management approach, but this will take time to do, to build a structure and encourage participation.
- Scotland has taken time to build an operating framework and are pushing for this as part of an EU-wide approach and are in agreement about the complexities and that the organisation should be better.

- There is a case for trialling the technology. The problems are often the regulations, and the trials sometimes cannot adapt. We are in a different world; things can change. The key element is how we can get more adaptive to our management processes.
- This is about data collection not crime detection. The focus is on regulation, legislation and investment, but industry needs to see the benefit. Improving co-management is the key.
- We need real time data, but one vessel does not make a data set. It takes time to scale up, and it is essential that the data we collect can be analysed and used. Scaling up has its own challenges. The more you rollout, the more data is produced, so more resource is needed to analyse that data.

Afternoon session. Future opportunities for REM

- [The EveryFish project](#). John Reidar Mathiassen, SINTEF, Norway.
- [Artificial intelligence – species recognition and other applications](#). Rebecca Skirrow, Cefas.
- [REM technology and advice](#). Jason Bryan, Archipelago Marine Research Ltd.
- [Defra's vision for REM and upcoming consultation](#). Elinor Brett and Imogen Cessford, Defra.

Discussion – panel session

- **Q. You have a lot of vessel groups listed, are there priorities withing that?**
A. Yes, we will take into account the data needs of different fisheries, and achievability. There are also some present challenges that we need other regulations to support. We welcome feedback on the priority fisheries identified, and welcome fishers coming forward who have a fishery on this list who would like to be early adopter.
- **Q. What about the legislation to enable this? What are your thoughts on quota as this has as caused massive challenges i.e., the landing obligation (LO). Do you envisage a real review on quota for current vessels to make it work?**
A. We haven't talked about it today, but we are looking at a reform of the LO alongside this. We are expecting to consult on LO reforms. This will not be a wholesale review on quota, but there are some ideas to forward.
- **Q. Choke species were a real problem under the LO. We need flexibility in quota, without flexibility it will be difficult to fish with REM. Will this be addressed? With choke species is there the opportunity for fishermen to pool their data in real time to relate to choke species to indicate hot spots so that the next fisher doesn't go to that area. This could drive value, but if everyone is catching choke species then that will not matter?**
A. Yes there are examples of this, where data has been fed back and has been used to produce maps, that were split by ICES areas into red, green, amber. It is really about how well that data is used. One of the elements of REM is to share data collectively, and how industry should feed it back.
- **Q. There is a difference between consultation and collaboration. We know there will be a consultation, but this already seems to be quite advanced. Can we be confident that viewers views have been taken into account?**
A. There is a dichotomy and the challenge of ongoing conversation versus the consultation process. We want to have conversations and we see a line in the sand about the consultation. The written consultation is an important step in the legislative process. It is a process for Government internally to gain internal sign-off. Future workshops and early adaptors produce valuable feedback. It is not just what we do, and when, it is how we do it.

- **Q. We need to start thinking of the direction. When can industry have most influence? Are we at the stage where you are going to send a document with ideas which we can comment on?**

A. We are in the question creation stage at the moment. It is really the start of the conversation, and the approach rather than when this is happening. The consultation is a chance to go back and review what has already happened, and potentially revise our plans. We want to illustrate why fisheries have been chosen. We want to make sure we use the consultation as a milestone and review it.

- **Q. In terms of the fisheries mentioned are they deemed to be data poor or non-compliant, or are the business models best able to afford the implementation?**

A. There was a process to look at various drivers. It does not mean they all have compliance issues, it does highlight data gaps, quota or stocks, and we need to learn more. Another area looked at was displacement and spatial squeeze. It doesn't point to any one and aims to bring this all together. In terms of finance the practical side was considered, such as costs, profitability and resilience, and this will be included in the consultation.

- **Q. There was mention of British Columbia and a fully documented fishery (FDF) being built from bottom up and accepted. What were the conditions and what type of fisheries?**

A. This was a groundfish, mixed species, trawl, long-line fishery, and it used to be an Olympic fishery. There were too many vessels, it was and over-capitalised. They caught too much, no money was made and there was risk to life regardless of the weather. The value of the fish reduced. They closed the fishery for a while, so it was handed to the fishers to design a programme that they could defend. They wanted 100% coverage. There was a large history of observer programmes, with costs associated and risk. This is a very complicated 100% REM programme on retained and discarded fish, delivered for a third of the cost of an observer programme. The REM data is used to validate other data types. 100% of the sensor data is assessed against logbooks. 10% of hauls are reviewed and compared to logbooks. This is an example of what is possible.

- **Q. Will the consultation include all aspects other than equipment, AI and supporting systems? What happens if you ask for early adopters and you don't get enough volunteers to develop meaningful data?**

A. There will be a section on implementation, costs, method of procurement etc but it is still early days. This needs to move from early adaptors to the mandatory phase and this is not without risk.

- **Q. There was mention of FDF, improving management, the evidence review and data gaps. With these priority fisheries what is your process to identify objectives for each fishery? How is this data going to be used. What is the link to the Fishery Management Plans (FMPs)?**

A. There is a need to set clear objectives at the start, but don't set too many objectives. The evidence review already conducted has highlighted some issues or data gaps. The objectives will come out more through the implementation workshops. There is increasing crossover with the FMPs, which are well developed, and the use of REM is coming up in those. Overlap was taken into account during the prioritisation, but it is yet to be seen how the two develop together. The Bass and Channel demersal FMPs have flagged REM for monitoring use. There is a need to work within the FMP structures, and a need to be clear on the objectives.

- **Q. We need to consider why previous schemes failed. There was no wriggle room, and they were impossible to deliver on. This is an opportunity to address some of the failures around technical measures, which are not a one size fits all. Will there be more scope for fishers to design a system that can be adapted around the practical realities of fishing. Will there be an opportunity for flexibility/deregulation from technical measures?**
 - A.** Once a system is installed there is scope to lay each vessel out differently in terms of camera placement. The end result is the main focus. The specification is for data delivery, it is not specific to how the hardware is configured.
- **Q. Fishers want you to introduce this to help science and data gathering. How confident are we that we can deliver on this data gathering? Given the number of vessels in the UK what percentage of data is actually reviewed?**
 - A.** The real issue at the moment is that the industry is too small. The economics don't stand up in terms of a business decision. But a 1% increase in data, is still additional data.